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## VARIOLA IN ANIMALS AND MAN.*

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THE eruptive fevers of mankind and animals possess a special interest for the pathologist and sanitarian, from the fact that many of them are very fatal; all are transmissible—some of them being special to one species, others to two or more species, and they are conveyed either by infection, contagion, or inoculation. They therefore are preventable, if proper sanitary measures are employed in dealing with them. Of these exanthematous fevers, the Variolæ certainly merit much attention, if only on account of the resemblances and differences they offer in the human and several animal species. Some are intensely infectious, others are only contagious; the Variola of one species is seemingly limited to that species, while that of another species may be transmitted to several species; in one kind of animal the fever is intense and the disease extremely virulent, and in another it is so mild as to be almost imperceptible. The eruption in several species is general, and possesses peculiar features; but in at least two other species it is more or less localised, and is very different in appearance; while in some species the rapidity of extension is extraordinary, and the damage and mortality great, and in others, again, the spread of the disease is slow and the loss *nil*. Another feature in the Variolæ is that, while all evidently belong to the same family, or group, each variety preserves its identity under all circumstances—that is, if transmissible from one species of animal to another, though they may be modified in their clinical features by such transmission, depending upon the differing nature of the soil in which the virus is implanted, yet, when re-transferred to their own or native soil, they exhibit all their original distinctiveness and individuality. This is what might be expected, and what, indeed, is remarked

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with regard to other communicable disorders. Rabies, when conveyed from the dog to man, offers very different clinical indications, and in the rabbit and bovine or ovine creature the symptoms are also dissimilar; but when the canine species is inoculated again from these, we find the development and the symptomatology of the disorder the same as when it is conveyed from dog to dog. And so with other contagious and infectious diseases; the virus of each—or, if you will, the germ—preserves its special and inherent potency and identity, which, if modified somewhat under certain conditions, yet remains true and unalterable in its salient manifestations.

Another remarkable and beneficent characteristic noted in some of these variolous diseases, is that the virus of one will protect from or antagonise the virus of another—that is, one variolous disease prevents the body being invaded by another variolous disease, and, as a rule, one attack is all an animal or man can have in a lifetime.

In this country veterinary surgeons have but little experience of variolous disease among the domesticated animals, and I daresay very many have never seen a case in any of these creatures. This is not so in some other countries, where at least sheep are affected with their form of Variola to sometimes a most serious extent. This Sheep-pox would seem to have been prevalent in England at times during the Middle Ages—notably an outbreak in A.D. 1276, which continued for twenty-eight years, and was due to sheep imported from France—and up to the commencement of the last century, as I have shown in my "History of Animal Plagues"; and during the present century it has been twice introduced among our flocks from the Continent—in 1847 and 1862. The Variola of the horse and cow we have yet experience of, though somewhat infrequently; but for a very long time we have heard nothing of dogs, cats, or swine showing signs of Variola, which would lead us to believe that they are now free from it in these islands. No doubt, with improving sanitation, it will also disappear from among our cows and horses, as it has done from among dogs, cats, pigs, and goats; and then we shall be compelled to rely for reports of it from our colleagues in India, who witness it frequently, as it affects all these creatures, as well as camels and, I believe, elephants.

So that for us the study of variolous diseases has not, perhaps, the same attraction and deep interest that it has for physicians pretty well all the world over, as Small-pox is a wide-spread and an alarming scourge among human beings, and is, I fear, likely to remain so; for the same measures cannot be resorted to, in order to stamp it out in mankind, as can be employed in dealing with it in animals.

This being the case, I need not venture to offer you a description of each form of Variola that is met with by veterinary surgeons in different parts of the world, but will rather, with your permission, refer to the affinities and dissimilarities existing between the several forms with which we are most familiar, referring more particularly to human Small-pox, Cow-pox, and Horse-pox. It may here be mentioned, incidentally, that the two latter are, clinically, very different from the first-named disease, and that, if we desire to study a form of Variola in animals which most closely resembles the Small-pox of man, we can only find it in sheep. In this ovine scourge we observe a similarity, almost approaching identity, which is very striking: in its extreme infectiousness, the great mortality it causes, the high fever and generalised eruption—as well as the character of the eruption, the symptoms and lesions which mark its course, the complications so frequently arising, as well as its being often present as a wide-spread epizoöty—all this approximates Sheep-pox in the closest possible manner to Small-pox. But the diseases are not due to the same germ or virus, for Sheep-pox prevails in a manner continuously in countries where Small-pox is extremely rare—as in East Prussia; and in countries where the latter is always prevalent, sometimes as an epidemy—as in England, Sheep-pox is unknown. In fact, the one disease has no influence either in the production of or protection from the other, for it seems to be firmly established that human Variola will not produce Sheep-pox, and that, while inoculation with the virus of the former will not protect from the latter, that of the Sheep-pox will not prevent Small-pox. It has been denied that ovine Variola cannot be transmitted to mankind, and the extreme rarity of cases of supposed accidental transmission would go to support this opinion. But several instances have been recorded, nevertheless, of veterinary surgeons who have suffered, through accidental inoculation; local and general disturbance, like that produced by vaccination, ensuing.*

Cattle cannot be successfully inoculated with Sheep-pox virus, though there is an instance recorded in which two cows were supposed to be infected through cohabitation with diseased sheep; and Haubner mentions that inoculation has sometimes produced pustules on the dog and pig, but re-inoculation did not give rise to the malady in sheep. Hertwig and Hering asserted that the disease is readily communicated to goats in a true form, and may then be re-transmitted from them to sheep. According to Giesker, the pustules are usually smaller, and the general disturbance is

* See my articles in *The Lancet* and the VETERINARY JOURNAL for 1881; also "Human and Animal Variolæ: a Study in Comparative Pathology" (London, 1881); also "Veterinary Sanitary Science and Police," Vol. II.

much less marked. But it has often been observed that transmission is very uncertain, as goats very often associate with diseased sheep without becoming affected. Hering knew of an instance in which fifty-four goats grazed with an infected flock of sheep, and only eight were attacked. According to Kersten, Lenhardt, Spinola, and Gerlach, reciprocal inoculation of goats and sheep is always successful; while, according to the observations and experiments of Gasparin, Dominick, Curdt, and Spinola, and, later, Gerlach, there appears to be a close identity between the Variola of hares and rabbits and that of sheep, inoculation from one species to the other always yielding positive results.

When vaccination as a protection against human Small-pox began to gain ground at the commencement of this century, many of the leading veterinary surgeons on the Continent tried it as a protective measure against Sheep-pox; but they soon found that vaccinated sheep were afterwards as ready to become affected with Sheep-pox as the unvaccinated. Verrier, Gohier, Husson, Voison, and other eminent veterinarians reported that, no matter how successful the vaccinations were, the sheep took Sheep-pox—either accidentally or experimentally—as certainly as if they had not been vaccinated.

As a further proof that, though so closely resembling each other clinically, there is no common origin to the two diseases, it may be mentioned that in Australia, New Zealand, South Africa, and America, Sheep-pox has never been seen, because it has not been carried to those countries; yet human Variola, imported into them from Europe, is perhaps as prevalent as with us.

The Variola of goats, which is particularly frequent in Norway, is not communicable to cattle or sheep; it resembles Sheep-pox, but is much less fatal, and it appears in places where Small-pox, Cow-pox, and Sheep-pox are never seen.*

Horse-pox possesses more interest for us than Sheep-pox, inasmuch as it is not rare in this country, and is transmissible to man and the cow, accidentally and experimentally, and in them can scarcely, if at all, be distinguished from Cow-pox. Long before the days of Jenner, an inflammatory or eruptive malady of the heels of horses was supposed to infect men and cows, and was named, from the cutaneous discharge which was its chief feature, "Grease." But Jenner confirmed the popular notion, and was decidedly of opinion that the "sore" heels or "Grease" of horses, which infected the farriers who shod and the grooms who attended such horses, was Horse-pox and could produce Cow-pox.

This opinion was confirmed by Dr. Loy, of Pickering, who, in a

* *Ibidem.*

little pamphlet which is now extremely rare, states that his earlier experiments to prove this relationship failed, because, I presume, he was not aware that there is another disease of the heels and lower parts of the horse's limbs—the real "Grease"—which somewhat resembles Horse-pox; but at last he had the good fortune to find a horse on whose heels the matter was much more limpid than with the others he had tried—this was on the fourteenth day of the disease; the seventh of the discharge from the heels.

Four cows inoculated with this matter showed the usual symptoms of Cow-pox, and a child, also inoculated with it on the arm on the third day, had a papule surrounded by slight inflammation; on the fourth day the papule was very elevated, and on the fifth day there was a purple-tinted vesicle; on the sixth and seventh days the vesicle had increased and was darker. At the same time there was fever, headache, quickened respiration, frequent pulse, white tongue, etc., which symptoms declined towards the ninth day. On the sixteenth day after inoculation from the horse, the child was inoculated with Small-pox matter without result. Loy alludes also to a farrier and a butcher of Pickering, who, in applying dressings to the heels of a horse affected with "Grease," became inoculated. Desirous of ascertaining whether the pustules which were on the hands and forehead of the butcher could communicate the disease by inoculation, he inserted some of the matter from one of them into the arm of his brother, who had never had Small-pox. The result was exactly the same as inoculating with Cow-pox virus. Loy recognised two kinds of "Grease"—one merely local and non-infective, the other local and constitutional (eruptive), which gives the disease to those who groom or handle the affected horses. With the first kind there was no general disturbance, but with the second, at the commencement, the horses exhibited symptoms of fever, "from which they were relieved as soon as the disease appeared at the heels, and there was an eruption on the skin. The horse, the matter from which communicated the disease by inoculation, was very unwell until the appearance of sore heels, which was, as in all the other cases, accompanied by an eruption over the greater part of the body." The fact that inoculation from the "constitutional Grease" was a protection from Small-pox, and that the rather severe effects of direct transmission from the horse to the human species were modified by passing the virus through the cow, or through mankind, was fully recognised by this enlightened observer; as well as the other important fact that the matter was only certainly effective when perfectly limpid, which was in an early stage of the disease. Loy likewise remarked that neither the original nor the communicated disease was infectious through the medium of the atmosphere.

The observations of this contemporary of the illustrious Jenner are extremely interesting, while they are decisive as to the intimate relationship existing between Horse-pox and Cow-pox. Though his pamphlet consists of only a few pages, it contains facts of great moment with regard to our subject, and there is perhaps nothing more astonishing in the whole range of medical literature, and especially that of vaccination, than the oblivion into which the record of his observations immediately fell. The opinion so strongly expressed by Jenner, based as it was on well-observed facts, and the convincing demonstrations (clinical and experimental) of Dr. Loy, do not appear to have availed much in establishing the existence of such a malady as Horse-pox.

The term "Grease" was very misleading, and was the cause of Horse-pox being overlooked, and, indeed, ignored altogether for some time; as experiments made by medical men and veterinary surgeons to test the statements made with regard to it were unsuccessful, because the discharge from the non-specific disease had been used. Nevertheless, we now and again have records of casual observations, even so early as 1803, when Professor Pictet, of Geneva, published a very important letter on Cow-pox and Horse-pox transmission to mankind; and in the spring of 1805, Viborg, professor at the Copenhagen Veterinary School, inoculated a cow with matter obtained from the heel of a horse affected with the specific form of so-called "Grease." On the fifth or sixth day on the udder and teats were bright transparent vesicles, with the characteristic areola and umbilicus of Cow-pock; and the cow exhibited a high degree of fever, while the secretion of milk was nearly suspended. Sacco made similar experiments, and these and his observations are as valuable as Loy's, confirmatory, as they were, of the existence of Horse-pox, and its ready transmissibility to men and cows, producing an exanthem which could not be distinguished from Cow-pock. In 1830, Professor Hertwig and eleven students of the Berlin Veterinary School became inoculated through handling horses affected with the disease in the limbs, more particularly. This form of "Grease"—in reality Horse-pox—was then prevailing as an epizoöty in North Germany. In the same year Professor Ritter, of Kiel, found a man who had been accidentally inoculated in the hand with matter from horses' heels. The vesicle or pustule exactly resembled that of a Cow-pox, and from it he inoculated two children; the result was undoubted vaccine vesicles. In this year, also, Dr. Rosendahl, of Nostorf, had the opportunity of observing the transmission of Horse-pox to several men; there was accompanying fever, and in some cases delirium. Berndt alludes to an instance in which a boy was infected from a horse suffering from the so-called "epizoötic

Grease" (*epizoötiscker mauke*), and from the eruption on him people were inoculated most successfully, fine Cow-pocks being developed. And so on with other instances.

In 1840 Darel observed an outbreak among horses in France, which was undoubtedly Horse-pox, and in 1843 Bouley saw another outbreak; but neither of these observers recognised it as equine variola, and it was not until a regular epizoöty of the disease appeared at Rieumes, near Toulouse, that serious attention was directed to it. Lafosse, of Toulouse, thought at first this epizoöty was only the ordinary "Grease" in an acute form, but he was happily inspired to inoculate a cow, in order, once more, to submit the Jennerian doctrine to an experimental test. The experiment was made eight days after the manifestation of the eruption on a mare, and was perfectly successful. Papules, then pustules, formed on the cow wherever the matter obtained from the mare had been inserted with the lancet—large, flat, firm, and round pustules, with a central umbilicus, which caused the borders to appear raised—they were the vaccine vesicles, in fact. Another cow was inoculated from this one, and had a very fine Cow-pock, from which a child and a horse were vaccinated, and these had a magnificent vaccinal eruption. A second child, inoculated with the matter from this horse, had, in its turn, a well-developed pock. Comparative inoculations were then made on children and horses with the equine virus and the ordinary humanised vaccine, and it was found that the former produced larger and finer pustules than the latter, though their evolution was slower. Lafosse designated the disease the *maladie pustuleuse vaccinogène* of the horse.

Bouley, then clinical professor at the Alfort Veterinary School, not quite satisfied with what had been done in this direction by Lafosse and others, resolved to inoculate cows with all the eruptive maladies of the horse which his daily routine of professional duty brought before him; and, singular to relate, the very first case (in 1863) was a successful one, and produced a beautiful Cow-pox. The horse presented the following symptoms:—On the inner surface of the lips, on the inferior aspect and free portion of the tongue, on the buccal and gingival membrane, and on the floor of the mouth—particularly along the Whartonian ducts—were infinite multitudes of small vesicles about the size of a pea, some circular, others elongated, whose opaline tint was in marked contrast to the bright-red mucous membrane on which they were seated. These pearl-tinted vesicles were smooth on their surface, had no depression, and were rather tense to the touch; pain was evinced when they were pressed upon. In some places they were confluent, in others discrete. When they had been ruptured, there were small, lenticular, very red sores, with sharply-defined borders.

A very abundant saliva, rendered frothy by the incessant movement of the tongue, filled the mouth, and escaped in long masses from its commissures. With the exception of not eating so well as usual, the horse appeared in good health. The symptoms were so different from those described by Loy and Lafosse that Bouley thought it was an aphthous Stomatitis, and that therefore, like the Foot-and-mouth Disease of bovines, it must be contagious. True to his resolve, he inoculated a cow to see what the result would be, and produced veritable Cow-pox, from which children were most successfully vaccinated. For some months other horses were admitted to the clinic of the school, suffering from the same disease, which varied in its symptoms only with regard to the seat of eruption, which was in some instances as in the first case, and in others as in Jenner's, Loy's, and Lafosse's cases. From these multiplied observations and experiments, most carefully watched and discussed by the most eminent medical and veterinary authorities in Paris, there could no longer exist the shadow of a doubt as to the nature of the disease, which was accordingly designated "Equine Variola" by Depaul, and "Horse-pox" by Bouley himself. Bouley confesses that for years he had met with the disease among horses from time to time, but until Lafosse's experiments at Toulouse he had not suspected its variolous nature. Since that time outbreaks of the disease in France have been often recorded, and it appears to be most frequent in Paris and its neighbourhood. In this country, strange to say, it has been seldom reported, though as to its existence there can be no doubt whatever, and it may be more common than is imagined, because it is generally such a mild disease that the veterinary surgeon's attention is not likely to be directed to it, and probably he would fail to recognise it if a case were brought before him. About forty years ago I saw a horse-shoer in Manchester who had been infected from what he said was a greasy-legged horse—there was a beautiful vaccine vesicle on his chin; and while I was with the 2nd Life Guards, twelve years ago, several young horses had the disease around the face and in the mouth and nostrils; other horses became infected from these, and my farrier-major, who dressed the eruption and administered medicine, was accidentally inoculated on a finger—the result was a typical vaccine vesicle with much local and general disturbance. This outbreak was reported in the VETERINARY JOURNAL, and was the first notice of the existence of Horse-pox in this country since the days of Loy and Jenner. Only a few weeks ago, cases of Horse-pox occurred at the Royal Veterinary College; from them Professor Axe inoculated calves, and produced unmistakable vaccine vesicles.

In Montreal, in 1882, there was an epizoöty of Horse-pox, which continued for two years. Many persons were accidentally inoculated, and the vacciniferous character of the disorder was established by medical and veterinary authorities.

So that since 1864, when the exact nature of Horse-pox was for ever settled by the observations and experiments of Bouley and others, no doubt has existed in the minds of those who have carefully studied the history of the disease that Horse-pox and Cow-pox are as like each other as possible, so far as the results of inoculation are concerned. But the two diseases appear to be perfectly independent of each other in their origin. Cow-pox appears where there is no Horse-pox or possible contact with horses, and where the men who attend upon these do not milk cows. It has frequently been observed that Horse-pox prevails on a farm or in a locality, and no Cow-pox is seen there; while the last-named disease may affect a number of cows in a dairy, and the horses be entirely free from Horse-pox. Hering, for instance, states that Cow-pox is very far from rare in Wurtemberg, while "Grease" (*Mauke*) is extremely uncommon; that men who work horses do not milk the cows, this office being undertaken by women in that essentially milk-producing country; and that the majority of the proprietors of cows which had been affected with Cow-pox had no horses. In none of the recorded outbreaks of Horse-pox has anything ever been said as to the existence of Cow-pox, and no attempt has been made to establish a relationship between the former and humanVariola, from which it differs as widely as the latter does from Cow-pox. Horse-pox, then, prevails entirely independently of Small-pox or Cow-pox. In some countries it is often present as an epizoöty—as in Lower Canada; while in other regions, where it is enzoötic, it will be more common in one part than another—as at Paris, where it is well known, and at Lyons, where, according to Chauveau, it is not seen.

Human Small-pox inoculations on the horse are either negative or nearly so, the positive results yielding only the most trifling evidence of infection, and nothing at all like Horse-pox being ever produced from the insertion of the Small-pox virus into the skin of the horse; while re-transmission to mankind only gives rise to Small-pox. But Horse-pox inoculated on the cow produces what in every way corresponds to Cow-pox, or on man to Vaccinia. From the cow and man Horse-pox can be transmitted indefinitely; and while its action is somewhat modified by repeated transmissions, its protective influence against Variola is undiminished. This has been demonstrated times almost without number, from the days of Jenner up to the present date. The most interesting and instructive of recent demonstrations in this direction is that recorded by

Dr. Pingaud, in a communication presented to the Paris Academy of Medicine in 1881. Having observed, with Drs. Viseux and Thomas, an epizoöty of Horse-pox in February, 1879, he determined to make some experiments, and selected as a vacciniferous subject a four-years-old horse affected with the disease, but whose antecedents were well known, and whose health at other times was excellent. The cutaneous eruption was discrete; there were only a few crusts of pustules about the hollow of the pasterns; but in the mouth, and within the upper lip, the mucous membrane was studded with vesicles offering the characteristic nacrous aspect. Lymph was collected from these pustules with the greatest care, and seven young soldiers of the 10th Hussars, who had not been vaccinated, were inoculated. On the sixth day six of the men showed at the seat of inoculation the characteristic vaccine vesicles, which had a somewhat inflamed base. From four of the soldiers lymph was taken; with this sixty-four men—eight of whom had never been vaccinated—were inoculated. In forty of these the result was positive—60 per cent. successful vaccinations. In none were there serious inflammatory symptoms, and only in a very small number did the inoculations assume a furunculous aspect. Calves were inoculated from the horse, but the success was only 48 per cent., which would rather tend to prove that the virus becomes attenuated in calves.

On May 5th, 1880, a case of Horse-pox was discovered in Paris among the horses of a German horse-dealer, and a three-months-old heifer was inoculated from it on that date. The result was a complete success, and from this animal another heifer was as successfully inoculated on the 13th of the same month. On the 19th there was a very fine vaccinal eruption, no fewer than sixty pustules being developed. Two other heifers were vaccinated from these, and so abundant was the lymph in the consecutive eruption that the Société d'Hygiene was well supplied with lymph for vaccination purposes.

Experimentally and accidentally, then, it has been demonstrated that Horse-pox and Cow-pox are nearly, if not quite, identical in their effects when transmitted by inoculation to man or the ox and horse. Chauveau carefully sought to prove this. He inoculated five horses and two asses with animal vaccine from Naples; the youngest animal was seven years old, the others were from sixteen to twenty years of age. In from the fifth to the eighth day the seat of puncture became markedly papulous, the papules increasing in size until about the tenth day, when they were acuminated, had a very broad base, and were red, hard, and painful. From the ninth to the twelfth day was the period of secretion, the epidermis being slightly raised throughout the whole extent of the papule by

an infusion of limpid citron-coloured serum; this dried into yellowish transparent crusts, very different in appearance to those of Vaccinia in man or the cow. The secretion of lymph continued for several days, and ceased from the thirteenth to the seventeenth day. When the crust was removed, there appeared a moist, granular, red surface level with the skin, but having a deep central cavity—a kind of umbilicus—in which had been fixed, like the head of a nail, the prominent under-surface of the crust. There was no febrile reaction.

In the asses, there was shedding of the hair and epidermis in various parts, with abundant serous exudation.

As compared with its evolution in man and the cow, the vesicle or pustule was longer in forming, and there was a difference in its shape and character, it being acuminated while the lymph was scanty, and the umbilicus small or altogether absent; though in an ass, sixteen years old, the vesicle had from the commencement a central umbilicus. In the horse the crust extends over all the vesicle, while in man and the cow only the centre is covered. In the cow the lymph is seldom abundant, and there is never more than a thin brown crust; but in the horse the crust is broad, thick, rough on the surface, and transparent and citron-tinted.

Depaul believed Horse-pox to be infectious, and cites, in support of his opinion, an instance in which a cow was inoculated with the lymph from the nostril of a horse, when seventeen other cows inhabiting the same shed were soon after infected, Cow-pox pustules appearing on the udder and teats. In addition, a horse kept in a badly-constructed box in this stable, and breathing the same atmosphere as the cows, was also affected, the eruption showing itself on different parts of its body. It is not at all improbable, however, that the cow-keeper and his assistants, who handled the diseased and healthy animals alike, were the chief agents in spreading the malady. Indeed, the wife of the cow-keeper, in milking the cows, was vaccinated on one of her fingers, and yet continued to handle the teats of the others, notwithstanding the pain she experienced. Bouley has had perfectly healthy horses and cows cohabit with diseased horses, and when the malady was produced in them he was always able to trace it to direct contact. During the epizoöty at Alfort, in 1863, it was possible to transmit the Horse-pox to a series of horses by placing them one after another in a stall which had been occupied by a diseased horse. Each animal became affected in turn, and at times its immediate neighbours also; but beyond those in that stable there were no further transmissions, all the other horses remaining unaffected. As Bouley justly remarked, a really infectious disease does not comport itself in this manner. Veterinary surgeons Turenne and Mathieu have also experimen-

tally demonstrated that Horse-pox is not infectious, and this is in accord with my own experience.

Cow-pox is a much more common disease than is generally supposed, but, like Horse-pox, it causes so little constitutional disturbance that cow-keepers think little of it when it appears among their stock. With its clinical characters veterinary surgeons are familiar ; if they are not, they should be. It is readily transmissible, like Horse-pox, to several species of animals, but only by inoculation ; and though presenting in the eruption at the seat of inoculation modifications in the different species, it always proves its absolute identity when carried back to the bovine species again, and shows that it is not altered by such transplantation. As human Small-pox most closely resembles Sheep-pox, so does Cow-pox resemble Horse-pox. Human Variola cannot be converted in Cow-pox no more than Sheep-pox can ; though for nearly a century it has been stated by the highest medical authorities that Cow-pox is simply modified Small-pox. Jenner himself seems to have thought that the two diseases were identical, and that they might have a common origin—people affected with Small-pox infecting cows and producing Cow-pox in them. This notion has prevailed among medical men up to the present time, and is prominent in medical literature. Badcock, a chemist at Brighton, who reported that he had frequently produced Cow-pox from Small-pox ; Ceely, a surgeon of Aylesbury, who made a similar statement; and Erasmus Wilson, Dr. Watson, and a host of other medical men have expressly asserted that the vaccine disease is only Small-pox rendered mild by passing through the system of the cow. " The great object of inoculating the Small-pox was to produce a benignant form of the disease by diminishing the number of pustules " (Watson). Thiele, Ceely, Gassner, Sonderland, and Voigt have stated that they produced Cow-pox in this way ; but it is strange that scores of other experimenters have failed, and even Ceely could not succeed when, a few years ago, he superintended an extensive series of experiments. Either these men have misinterpreted the results of their trials, or they have made grave mistakes. Their statements have on several occasions given rise to serious consequences, as when medical men, desirous of obtaining a stock of lymph, have inoculated cows with Small-pox matter, and, from the spurious vesicle produced, have vaccinated people, and thus caused a wide-spread outbreak of Small-pox. Commissions, composed of the most eminent medical men in France and Italy, have investigated this question, and have, after most careful deliberation, decided that the diseases are distinct, and cannot be converted the one into the other. One of these Commissions sat at Lyons, and the experiments were under the direction of Professor Chauveau,

then Director of the Veterinary School in that city. The conclusion of their report is as follows:—"The experiments, the results of which have been just mentioned—experiments as remarkable by their number as by their distinctness (*netteté*) and concordance—appear proper to solve the debatable points in view of which they were instituted. In establishing that Vaccinia and Variola, notwithstanding the features which assimilate them in animals as in man, are, nevertheless, totally independent of each other; that their viruses form two distinct individualities; that the two affections thus constitute two different, immutable species, which cannot be transformed one into the other; that, consequently, to seek to produce Vaccinia from Variola would be to pursue a dangerous chimera, which would revive all the dangers of inoculation of bygone days—in establishing facts of such great importance, the experiments directed by M. Chauveau have rendered an incontestable service to science and to medical practice."

Neither cow, horse, nor other animals, unless it be the quadrumana, are susceptible to human Small-pox infection, and the statement of Badcock that during four years he had transformed Small-pox into Cow-pox in upwards of ninety cows must be received with incredulity. He admits that the points of difference between the two diseases are such as suffice to indicate their dissimilarity, and to stagger our belief in their essential unity! "Thus," he says, "Small-pox is infectious, but Cow-pox is not so. Small-pox diffuses itself over the whole surface of the body, but Cow-pox does not do so. Cow-pox is characterised by a double areola, surrounding the vesicle, which is not the case in Small-pox. Small-pox is attended with violent fever and severe pain in the head and back. Cow-pox is attended with a fever of a much milder character. The Cow-pox vesicle is depressed in the centre, of a pearly appearance, and contains a transparent crystal fluid; the Small-pox pustule, on the other hand, soon suppurates, and becomes conical in its figure. The crust of the Cow-pox is of a dark-brown colour, like a tamarind stone; but the crust of the Small-pox is of a lighter colour, like the honeycomb. It has been noticed that when the variolous and vaccine fluids are mixed together, and thus inserted, sometimes the vaccine pustule, at others the variolous, has been produced, each of them retaining its characteristic marks throughout. Again, it has been found that when the two fluids are inserted separately, and so near together that the two pustules which follow spread into one, by inoculating with the fluid taken from one side of it, the vaccine pustule alone will be produced, while the fluid taken from the other side excites the genuine variolous pustule with the general eruption of Small-pox on the body. Thus, while the similarity of the two diseases was indicated by their

equally exerting a protective power over the constitution, their dissimilarity was sufficiently evident to require some further proof of their being the same." It is surprising to find Mr. Badcock writing in this manner, and yet contending for the unicity of the two diseases. Small-pox is Small-pox, and continues to be so, no matter what may be done to modify it; and Cow-pox remains unaltered, no matter how long it is transferred from man to man. If it were Small-pox merely modified by being passed once through the body of the cow, then Small-pox it would become when retransferred to its native soil in mankind. Notwithstanding the millions—nay, tens of millions—of vaccinations practised since Jenner introduced his method of protection from the human Variola, there is not an instance on record of Vaccinia becoming Variola. See, too, the extreme facility with which Vaccinia can be inoculated in cows, and mark the failures everywhere when it is attempted to variolise them. For years I have protested against the dangerous and fallacious notion that Cow-pox is merely human Small-pox passed through the cow, and I have challenged those who made the statement to prove it. This they cannot do.

I may mention that in 1878, Dr. Klein, experimenting under the supervision of Dr. Seaton, Professor Burdon-Sanderson, and Mr. Ceely himself, inoculated sixteen heifers and fifteen milch cows, with Small-pox matter, obtained from persons affected with the disease at various stages; but the results were entirely negative. Cow-pox could not be produced.

When we consider the question of aptitude of one species to receive the Variola of another, we meet with marked differences. Some species will readily take the Variola of another species, and retain it, unimpaired in virulence, through a continuous series of generations, while they will remain stubbornly refractory to the reception of the Variola of a third species; or if they do receive it, it is in an abortive form, and cannot be transmitted beyond the second or third series of animals.

Vaccinia affords us a good illustration of this fact. In a remarkable paper written by Chauveau, and published in 1877, on the vaccinogenous aptitude of the principal vacciniferous species, he gives the following general conclusions derived from an exhaustive experimental study:—

"1. Classical vaccination proves that the three principal vacciniferous species—man, ox, and horse—are equally ready to transmit Vaccinia indefinitely, and exhibit a like vaccinogenous aptitude. The horse, nevertheless, is distinguished by the relative frequency of true generalised vaccinal eruptions which, in young animals, may follow cutaneous inoculation.

"2. When, instead of inserting the vaccine virus into the

mucous layer of the derm, it is passed into the subcutaneous connective tissue, it manifests its action by two kinds of effects common to the three species: a more or less marked local affection is developed, and the animals acquire *vaccinal immunity* as absolutely as if they had undergone the classical vaccination. This double result is obtained equally well in the three species, so that they are allied, as it were, in the vaccinogenous aptitude.

"3. These ordinary and constant effects are not the only ones produced by the injection of the vaccine virus into the connective tissue. In the equine species, and particularly in young animals, there sometimes occur magnificent pustular eruptions, which, in their seat and general characteristics, differ in nothing from natural Horse-pox. These vaccinal eruptions have never been observed in the experiments on the bovine species, though they were numerous, and made under those conditions which are reputed to be the most favourable to the development of the so-called "'spontaneous Cow-pox.'" And these eruptions have never been witnessed in experiments on man, though it must be confessed that the number of these was small.

"But the negative results in the human and bovine species do not authorise the conclusion that these are refractory to the manifestation of the vaccinal eruption in the before-mentioned conditions. They demonstrate this important fact, that, so far as aptitude for the development of this exanthem is concerned, the organism of the horse possesses an incontestable superiority.

"4. This superiority is equally manifest, whether the vaccine virus is introduced directly into the lymphatic or blood-vessels, or enters by the natural channels of absorption. The intra-venous injection of vaccine matter—the most certain and easiest of these experiments—does not appear capable of producing vaccinal immunity in bovine animals. But in the horse not only does it ensure this immunity, but it often produces the vaccinal exanthemata which are an exact facsimile of those of the natural disease.

"5. The results of this experimental study show as well, if not better, than clinical observation, that the horse has a special aptitude for the natural or spontaneous development of Vaccinia, either under the influence of occult *contagia*, or by the problematical intervention of some other equivalent cause which has yet to be ascertained. The bovine species is far from manifesting such an aptitude for the evolution of natural Vaccinia. It might even be asserted that, in this respect, the ox is not superior to the human species—at least, it is certain that the inferiority of the latter has not been demonstrated.

"From this study it is evident—and the evidence is further

fully confirmed by clinical facts—that the organism of the horse is the real source (*vraie patrie*) of natural Vaccinia, conformably to the views of Jenner."

Chauveau notes, in the course of his remarks, that if the other supposed vacciniferous animals—the goat, sheep, dog, etc.—show more or less distinct eruptions when they are vaccinated, the virus cannot be indefinitely cultivated on them; it loses its activity very rapidly, often in the first generation.

With regard to the protective influence of one attack of Variola from subsequent attacks, there can be no doubt; and this protection has been sought for, with a view to preventing the more serious Variolæ of certain species of animals, by inoculating them with the virus of a less malignant Variola of another species. But here, again, we find evidence in support of our view that every species has its own particular Variola. Human Small-pox, readily communicated from a diseased to a healthy person, can scarcely be transmitted, if at all, to the lower animals; while Horse-pox and Cow-pox are easily transmissible to a number of species, and in man and the horse and cow, when inoculated, will certainly ensure against the natural disease. But we have seen that Sheep-pox is not communicable to other animals (if we except the few, and not very reliable, instances recorded), and that vaccination will not protect ovines from their special Variola.

Professor Crookshank and Dr. Creighton, adopting more or less the views of Dr. Auzias Turenne, are of opinion that the Cow-pox is analogous to human Syphilis. I must confess, however, that, so far as bovines are concerned, I can see no analogy whatever; there is no disease of cattle at all allied to Syphilis, so far as I am aware—for we cannot compare the Gonorrhœa which we sometimes observe in them, and which is undoubtedly contagious, with the very serious disease which produces such disastrous constitutional effects in mankind. If we assume, as we may well do now, that Horse-pox is most closely allied to, if not altogether identical with, Cow-pox, the analogy of the latter to Syphilis is still further removed; as Horse-pox is a very benignant disease, marked by the most trifling constitutional disturbance, and having no secondary or tertiary *sequelæ* like the human scourge; though it is very contagious, and may be transmitted in the act of coition. It should be remembered that the horse has its own peculiar Syphilis, marked by many of the salient features which characterise the venereal disease in mankind; but it is widely different in every respect from Horse-pox.

## FILARIA OCULI.

BY T. MARRIOTT, A.V.D., SIALKOT, PUNJAB, INDIA.

*History.*—Troop mare, C 47, 2nd Dragoon Guards (Queen's Bays), joined as a remount, 8th October, 1889, from the Saharanpur Depot, where he had probably been for the previous eight months.

During the Cavalry camp of exercise at Muridki, a Filaria Oculi in the near eye of this mare was first noticed on 12th of January, 1890. The parasite was then springing gaily about in the aqueous humour. I delayed operating, in order to procure some cocaine. On the following day, having obtained the cocaine, I punctured the cornea at its upper and outer margin, but no filaria escaped. On careful examination through the now fairly opaque cornea, I detected the parasite near the inner and lower margin of the cornea, it having attached itself to the iris. I then punctured immediately over the parasite. It escaped this time, but the amount of iritis set up by the filaria having attached itself to the iris, considerably retarded recovery, as the patient was not discharged until 5th of February, no trace of the original trouble being left, except the marks of cicatrization.

To my surprise, this mare was admitted to hospital again on the 14th of April, with another filaria in the near eye. Not to be caught napping this time, the cornea was punctured at once, as being in cantonments, cocaine was at hand. The operation was successful, and no iritis or ill effects followed; the cornea cleared in a short time, and the horse was discharged. I record this case as I have never before seen, heard, or read of two filaria developing in one eye, also to show the folly of postponing the operation. Although a four per cent. solution of cocaine applied to the cornea makes the operation painless, I shall never wait for that in future; for the parasite does not long continue to spring about as gaily as it does at first, but soon attaches itself to the iris; the tail then is the only portion moving, but this soon winds itself around the body, describing a loop like the top of a driving whip with the lash wound round the stock. When the worm assumes this form, puncturing the cornea is useless—at least, it has been so in my practice.

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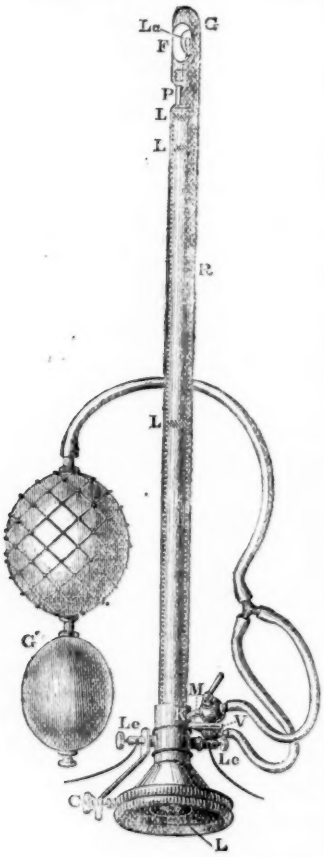
## LARYNGOSCOPY.*

BY F. RAYMOND, F.R.C.V.S., F.R.M.S., F.R.G.S., PRESIDENT OF THE SOUTHERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

THE maladies connected with the cavities of the head and throat in horses, although generally of a more or less benign character,

* A notice of Dr. St. Polansky and Dr. H. Schindelka's paper in the *Oest. Zeitsch. f. Veterinarkunde*, p. 295, Vol. ii., 3 and 4 Book.

are liable at times to cause a great deal of anxiety, particularly when there is a suspicion that they may be of a contagious or infectious nature. I think that, as far as the *visible* mucous membranes are concerned, and, perhaps, also the ordinary inflammations of the larynx, enough is known for ordinary treatment; but there is a region situated beyond, about which we cannot always speak with certainty; this is the region near the turbinated bones, the guttural pouches, the Eustachian tubes, velum, glottis, and arytenoids.




It will be in the memory of those of the readers of the VETERINARY JOURNAL who follow the progress made by the sister profession, that some time ago an instrument was invented by Mr. Leiter, of Vienna, for the illumination of the human bladder; and at the time some very interesting engravings were published in one of the medical journals from photographs. These engravings represented calculi and tumours *in situ* in the bladder. Moved probably by discoveries made in this field, two veterinary surgeons at the Vienna School, Drs. St. Polansky and H. Schindelka, who had attempted to illuminate the nasal and other cavities with reflectors and gaslight, applied to Mr. Leiter for his assistance, and between them they produced an electric laryngoscope, which I will now describe from their paper. It consists of a straight tube (R) 56 cm. long and 4.7 cm. in circumference. The apex is rounded (cupola) and contains an electric lamp (La). A small glass window is let into the tube over the lamp, through which the light is shed. The poles of the lamp are inserted into the platinum sockets. Below the lamp

is a rectangular prism (P), which is placed in the tube in such a way that the image of the parts illuminated by the lamp, is diverted into a small telescope in the body of the tube. By this means a diminutive picture is brought to the observer's eye. At the lower end of the laryngoscope are placed the pole-screws (Le) to hold the wires from the battery, as well as a contact screw (C) for closing, or otherwise, the current. As the position of the screw corresponds with that of the lamp and prism at the other end, it may also be of use in showing in what direction the lamp is facing when inside the cavities. As the heat generated by the lamp is liable, if the instrument is long in position, to be injurious to the membranes, a cooling apparatus has been applied. Thus at K two hollow processes (M and V) are let into the tube. Upon one of these the tube of an indiarubber bellows is connected, the other end being applied to a worm, arranged in a small tin pail, which is filled with a cooling solution. The air is pumped into the laryngoscope at M and escapes at V.

In order to prevent the lamp glass and the prism from being obscured by secretions whilst being introduced, it was necessary to have a guard which could be moved to and fro; this has been accomplished by applying an outer movable sheath to the laryngoscope, which, when the instrument is *in situ*, can be drawn back, thus freeing the upper end. Drs. Polansky and Schindelka use one of Leiter's batteries to obtain their light.

As the examination of glandered horses with this apparatus is in the highest degree dangerous, these gentlemen have introduced a tin mask with plain glass eye-holes, which should be used by the operator whenever there is any suspicion of contagion.

They have also invented a steam apparatus for the destruction of any morbid germs, which may adhere to the laryngoscope after an examination; this was a necessity, considering the purpose for which the tube is used. It is, however, somewhat doubtful whether such a delicate instrument as the laryngoscope would stand a prolonged contact with steam at a high temperature.

To examine the larynx, Eustachian tubes, etc., the following method should be adopted:—The instrument should be raised to a temperature (about equal to that which reigns in those parts) by plunging it for a short time in warm water. If this precaution be neglected, the glasses are very liable to get obscured by condensed steam from the breath. It is next advisable to lubricate the instrument with glycerine, in order to assist in passing it over the membranes. The next step is to take the tube in the right hand, and holding it as one does a pen, to insert it into the nose. If it is to pass up the off nostril, the point of the instrument should be directed to the part of the mucous membrane which corresponds

to the laryngeal outlet. In this way it should be gradually passed, by means of a screwing movement, into the lower nasal passage, at the same time the point of the tube should be kept in apposition to the septum nasi. This object is best attained by giving the outside end of the tube a bearing away from the septum. It is very important that no force be employed. Notwithstanding all precautions, bleeding will occur either from tumours, ulcers, or thickened membranes, but it is not of importance.

The above is from a pamphlet by Messrs. Polansky and Schindelka *(Oesterr. Zeitschrift fur Wissenschaft, Veterinark.*, Vol. ii., 3 and 4 Book, page 295).

This instrument has now been in my hands for about a year, and I have frequently employed it. It is a very expensive instrument, but when all goes well and a good view of the larynx, guttural pouches, etc., is obtained, it is impossible not to admire it, for it is possible to observe these parts as plainly as if they were outside the body.

I say, "when all goes well, it is possible, etc.," because, unfortunately, it very often happens that *contretemps* occur which exercise the patience very severely. In the first place, it would appear that English horses do not appreciate its benefits as highly as the Austrian, for whereas our authors state that it can be used on horses standing, with merely a twitch applied, I find it quite impossible to do anything of the sort; as soon as the apex has penetrated a short distance a fight happens, causing risk to the animal and the instrument. The simple reason is that the instrument is clumsy; it is too thick for English horses. There is no difficulty at all in reaching the epiglottis of any horse in the erect position, with a gently applied twitch, and with a tube of moderate dimensions, say a little larger than an ordinary catheter. I have never failed, it requires no special skill, and there is no resistance. The reason why the laryngoscope cannot be used standing, is simply because it is much too thick. It is therefore necessary to cast the horse. During my trials I have been astonished to find how very much the neighbourhood of the turbinated bones varies in diameter in different horses, and as far as I have gone there does not appear to be any rule in the matter. Some well-bred horses have a constricted space, others the reverse; in the same way one heavy wheel horse will have a large space, another a very constricted one. Nearly all the horses I tried were healthy, as far as that region was concerned, so that the constrictions can hardly be accounted for by pathological thickening. The great difficulty is in introducing the laryngoscope for the first ten or eleven inches. Sometimes the turbinated bones are heard to creak, and there is a flow of blood which is blown all over the operator's face. Very

often the animal struggles at this moment, and there is great danger of the instrument becoming bent, or of injury to the animal itself. At other times mucus is thrown out on the glass after the sheath is drawn back, and the process has to be repeated. It very often happens that even when the horse is cast and two twitches are applied, the instrument cannot be safely introduced, and therefore chloroform has to be given. This is all right as far as the examination of the membranes goes, but if it is desired to observe the arytenoids, it is a drawback, because they hardly move at all when the animal is insensible. Up to the present I have failed to make a proper examination of the vocal cords, because they are thrown into the shade; but now and then I have seen the anterior edge faintly. Had there been a tumour on one of them I might perhaps have noticed it as a prominence.

As already stated, I have used the instrument on horses with sound membranes—favourable subjects in this respect; but the authors recommend its use in doubtful cases of Glanders. No doubt their courage is admirable, if they use it themselves, but I should be very sorry to employ it, even with a mask. If the case is Glanders, the odds are that there will be ulcers high up the nostril, which, besides the usual discharge, will bleed as soon as touched. The pain will make the animal blow and struggle so that the face of the observer will be in a spray of infection. Is it necessary to say much more on this point, when there are other very good ways of diagnosing the malady?

I have not had any opportunity for employing this instrument in other cavities of the body, but it might well be used for such purposes as illumination of the bladder in lithotomy, etc., for in any place where there is room it will act most admirably.

This laryngoscope is no doubt an important step in veterinary surgery, and if improved—as no doubt it will be, in time—may be of use to the general practitioner; but to be of use in England it should be smaller in bulk, and perhaps it might be otherwise simplified.

The fundamental objection is its diameter; until that is remedied the instrument will rarely leave the portals of our schools, even if it reaches them. The pamphlet is accompanied by four chromographs to demonstrate what can be seen by using it. I am afraid my glass is not so good as our author's, because my images are not so clear as those shown by them.

## VOMITURITION IN THE HORSE AND SOME OTHER ANIMALS.

BY R. W. BURKE, F.R.C.V.S.

THE subject of "Vomition in the Horse," as it is called, was among the most favourite topics of old practitioners, and yet it may truly be said that it is one of the most disputed, if not least advanced, points in physiology to-day.

A brief consideration of the question may lead us to inquire how these difficulties are to be overcome, and a correct appreciation of the facts actually presented would tend to an understanding why it is that certain animals cannot vomit. It is advisable in the first place to inquire into a few details of this subject. The first question that presents itself is, Why the horse is not nauseated to the extent of producing visible efforts at vomiting, by the administration of emetics? I may remark that Mr. Morton once administered eight ounces of tartar emetic to a horse without producing any visible efforts at vomiting. The only emetic I know which produces that effect on this animal is white hellebore, when given in full doses every three or four hours *per orem* for five, six, or even eight days; and then only two or three horses will show symptoms of nausea out of some half-a-dozen or more experimented on. Tinct. hellebore injected into the veins produces the same effect. The horse repeatedly makes violent efforts to vomit, in the same manner as man does, but does not bring up anything from the stomach.

The horse makes great efforts to vomit in choking, but brings up nothing. In ruptured stomach it brings up the contents of the stomach, but almost without an effort, as every time it lowers its head it brings up the contents of the stomach through the nostrils.

I administered one-eighth of a grain of veratrine in solution to a wild rabbit and a guinea-pig, producing marked nausea in a few minutes, without emesis. In both of these cases the stomach was seen to contain a sufficiency of food.

Now, the second question arises, Why these animals cannot vomit after making violent efforts to do so? It seems clear that if the various classes of cases described as vomition be considered, a large body of evidence may be adduced to show the reasonableness of the idea that, even if vomiting is not an easy act with some animals, vomiturition is a common occurrence. What the exact meaning of this difficulty may be, and in what way the process of vomiting is hindered, are questions difficult to answer. Several suggestions might be made, but nothing more. I do not pretend to explain the different causes, in the present state of our knowledge of the subject.

But however this may be, this production of nausea in the horse and some other animals—this state of vomiturition, shall we call it? by the use of veratrine that is not accomplished by tartar emetic for instance, is a feature to my mind of great interest, because it harmonises with the fact that there is a vomiting centre in the medulla of the horse and other animals, which is almost, if not quite, as easily excited as it is in man; while there appears to be some doubt regarding the local vomiting centres, of Goltz, described in the stomach and esophagus, and the truth of which we can supply evidence in our own experience, that local irritants —like tartar emetic and other agents—have no effect on the stomach of these animals.

I would observe that it seems to me of paramount importance to keep clearly before the mind the distinction between the stomachs of different animals. The great bane of scientific hypotheses is to take as of equal value facts elicited by experiment on different animals. Hence arises the contradictions in our knowledge of the effects of irritation and section of the vagus. The complex distribution of this nerve alone accounts, I think, for the mystery that still hangs round the question, Why some animals cannot vomit, after making violent efforts to do so? We have noticed that experimentally the horse, guinea-pig, and wild rabbit may be nauseated by the action of veratrine, probably through the medium of the medulla and the pneumogastric nerve. They cannot vomit, because of the relatively small size of their stomach, which, it is believed, escapes extrinsic compression of the abdominal muscles. Lastly, it is not improbable that inhibitory fibres are supplied to the stomach of some animals, which greatly impede its power of contraction and prevent vomiting, in somewhat the same manner as the action of the heart is checked by similar fibres.

On the whole, I consider that the term "vomition" has little warrant when applied to this action described as noticed in the horse and some other animals, and ought to be discarded, but that vomiturition might well be suggested instead; for we have seen that emetics, which excite marked nausea, fall short of the power to produce actual vomiting in these.

# Editorial.

## DISHORNING CATTLE.

THE solution of the question as to whether it is cruel to perform any operation of a painful nature upon animals must be based upon the necessity for the operation. The infliction of unnecessary pain is cruelty, and therefore, if a person performs an unnecessary operation which entails suffering he is guilty of cruelty, and any one instigating thereto must also be held guilty as an accessory. The *jus animalium* demands that this view be adopted, and it is recognised in courts of justice as the law of the land. As to what operations are necessary, and what are cruel, because not needed, we will not venture to discuss; but it may be observed that even among veterinary experts there is a wide difference of opinion on this point. Certainly, there are operations which must be performed on healthy animals—putting aside altogether those for the cure, prevention of, or relief from disease or deformity—though even in the performance of these there may be cruelty if they are unskilfully or barbarously conducted. Operations which render animals more useful to man, or without which they perhaps could not be safely utilised by him—castration of the horse, for instance—cannot be regarded as cruel, though humanity requires that they be performed with skill, and as little pain as possible; but those undertaken with the object of *improving nature*, and which may be more fitly termed mutilations designed to gratify a depraved taste or stupid fashion—such as "cropping" dogs' ears and tails, "dubbing" fowls, and "docking" all riding horses' (and, it might be asserted, 99 per cent. of harness horses') tails—should be classed as cruel, and therefore a violation of the law. Not only do they occasion pain, and often immediate grave results, but they cause serious inconvenience and discomfort to the animals afterwards—as, for instance, the torture docked horses experience from flies.

The practice of dehorning or dishorning cattle has revealed the usual divergence of veterinary opinion as to what is cruelty and what is not cruelty, and has given judges and the public another opportunity of commenting on the unreliability of professional knowledge. The testimony given by veterinary witnesses has fairly baffled those before whom test cases have been brought for judgment, and has necessitated appeals to the highest courts of law, where common sense may prevail in settling the question, apart altogether from the vagaries of scientific minds. It has been decided by the High Court of Justice that in England dishorning is cruel, and therefore unlawful; but in Scotland and Ireland no final decision has yet been arrived at. It will be a curious result of the pending appeals in these countries, if what in England is declared to be illegal is pronounced perfectly lawful in them.

That dishorning is painful there should be no doubt whatever in the mind of any one who knows the anatomy of the parts operated, even when the operation is performed by a skilful operator; but when it is done by a clumsy amateur with imperfect instruments, then of course the pain becomes increased, and amounts to torture. And not only is there the immediate pain of sawing through the sensitive structures and the bone which forms the core of the horn, but the after-effects lead to suffering, and sometimes a serious termination is observed. The hæmorrhage is at times so great that the wound has to be cauterised; inflammation of the mucous membrane lining the sinuses of the head is a frequent occurrence, leading to suppuration, and in some instances to gangrene, which usually ends in death. Not unfrequently, when the inflammation in the sinuses is severe, a more or less violent form of ophthalmia in one or both eyes ensues. In some cases the wound does not heal completely, and fistulæ appear, which give exit to pus; and Lafosse has reported inflammation of the brain as a sequel of amputation of the horns.

But if it be conceded that the operation is necessary in the interests of cattle-dealers, and also in that of the animals themselves—a matter which is disputed—it must be admitted that it should be conducted skilfully and properly, so as to entail as little suffering as possible; and to secure this most desirable object, surely an anæsthetic might be employed. In fact, the operation is one that should certainly be undertaken by a veterinary surgeon, not by a farm-labourer.

It is a question, however, whether the operation—granting always that it is necessary—does not amount to cruelty when performed after a certain age. In early life (at two or three months old) the rudimentary horns can be completely extirpated (as shown and described in Fleming's "Text-Book of Operative Veterinary Surgery," Part I., pp. 255, 256) with no danger and very little pain. This is the time when operative procedure ought to be resorted to, and it should be considered a legal offence to subject cattle to the torture of amputation of the horns when, through carelessness or apathy, these organs have been allowed to become fully developed. No excuse should be allowed to prevail under such circumstances, and we are certain that no veterinary surgeon who values the reputation of his profession with regard to humanity, will be found to offer any. If oxen must be bred with horns which are a source of inconvenience and danger in adult life, then these appendages should be removed at a suitable time, when such removal is very easy, and entails but little suffering and no danger to the animal. Such a course should surely commend itself to cattle-breeders as far more humane and business-like than the stupid and brutal practice which now prevails, and which, while it gives lawyers employment, fills with disgust those who have any feeling for animals, at the same time displaying the hopelessly divergent opinions of veterinary experts.

## THE CASUALTIES AMONGST ARMY HORSES IN THE FIELD.*

BY INSPECTING VETERINARY SURGEON W. B. WALTERS, F.R.C.V.S., ARMY VETERINARY DEPARTMENT.

THE subject which I have the honour to introduce to your notice is one of considerable interest to Officers of all branches of our land forces, and particularly to those who are immediately connected with the mounted portion of the Army; for not only is the heavy mortality which invariably occurs amongst the horses and other animals of an army in the field a question of serious moment, but scarcely of less importance, from a service point of view, are the numerous casualties of a more or less temporary character which are associated with every campaign, and which frequently cripple and reduce the strength of the fighting force to such an extent as to materially interfere with the progress of the military operations.

The efficiency of the mounted troops of an army is an important factor of success in war, and therefore it is obvious that any serious reduction in the strength of these arms must, of necessity, be a source of grave anxiety.

The experience gained by all departments of our Army since the Crimean days has been the means of vastly improving the condition of both the soldier and his horse, on service. Horses are now carefully inspected prior to embarkation, and only sound, serviceable animals are selected. The means of transporting mounted troops by sea have largely increased, and are greatly improved. All ships chartered by Government are thoroughly inspected by competent Officers, and are fitted with every modern appliance for the comfort and safe conveyance of the animals on board. Ventilation, sanitary arrangements, grooming, watering, feeding, the treatment of the sick, and the various other details attending the management of horses at sea are now thoroughly understood and efficiently carried out.

No less marked are the improved arrangements for the care of horses in camp. The exciting and pre-disposing causes of very many of those casualties which, in former years, used to fill our hospital lines, are now readily detected and should be as easily avoided.

Improvements in saddlery, line gear, forage and transport arrangements, together with a properly organized veterinary service, have assisted to bring a very considerable number of these cases within our control. This fact being established we may reasonably expect a considerable reduction of the so-called preventable casualties in our future campaigns, but whether the knowledge we possess, or the means at our disposal, will materially affect the rate of mortality amongst horses in wars to come, is a question impossible to answer. It is more than likely that campaigns will be of shorter duration than heretofore, but, on the other hand, the introduction of magazine rifles of increased range, quick-firing machine-guns, modern artillery, and the probability of mounted troops being required to make greater exertions, tend to the supposition that the death-rate will be increased rather than diminished.

The question of our Army horse-supply has lately occupied the attention of able and competent authorities, and I believe I am correct in stating that, for the first time on record, arrangements have been made to establish—upon a complete and satisfactory basis—a reserve of seasoned horses, trained to saddle and harness, and in sufficient numbers to meet the requirements of an Army in the field. A raw remount is a poor substitute for a trained and seasoned troop horse, and therefore the establishment of this system cannot be too highly estimated.

* A paper read at the Royal United Service Institution, Major-General Ravenhill in the chair.

The average mortality amongst the cavalry horses employed during the Crimean war has been estimated at eighty-six per cent. per annum. This percentage appears at first sight to be extremely high, but it must be remembered that, in addition to the losses caused by wounds and injuries received in action, the animals were subjected to privations of an unusually severe character. The suffering endured by both man and beast during the exceptional severity of the winter months is a matter of history. Hundreds of horses, weakened by exposure and other debilitating influences, sickened and died in the lines, while others fell victims to the inevitable consequences of unsuitable, and frequently insufficient, food. Glanders, Farcy, and Mange were rife, and scores of animals had to be destroyed.

When these facts are taken into consideration, the high rate of mortality amongst our cavalry horses in the Crimea can be readily understood.

During the Franco-Prussian War of 1870-71, 38,000 horses were employed with the German Army. Of these 22,000 were supplied by the Home Governments, and 16,000 were obtained either by capture, or by requisition on France. The losses among these animals were, according to the official account, as follows:—

| | |
|---|---|
| Killed or died of wounds .. .. .. .. .. | 7,325 |
| Wounded .. .. .. .. .. .. .. | 5,547 |
| Missing .. .. .. .. .. .. .. .. | 1,723 |
| Total .. | 14,595 |

It will be observed that the casualties resulting from injuries received in action alone amounted to nearly forty per cent., and if we assume that the cases arising from sickness, and other causes incidental to the ordinary conditions of warfare, were in average proportion, we may reasonably estimate the total casualties at more than double this percentage.

The reserve of horses for the Russian Army during the war of 1877 against the Turks was calculated at 10 per cent. only of the number in the field.

I regret that I have been unable to obtain reliable statistics as to the casualties which occurred in this campaign, but it is obvious that the requirements for re-mounting must have very considerably exceeded the estimate.

In the spring of 1879 2,323 horses embarked with the British troops proceeding to South Africa to take part in the Zulu campaign. Of these 82 died, and 3 were destroyed on the voyage, leaving a total of 2,241 landed at Durban. In addition to these animals a battery of Royal Artillery was already in the country, and about 4,250 colonial horses were purchased for mounting local corps and for various other purposes.

The casualties among the English horses from the date of debarkation to the 30th September, 1879—a period of about six months—were as follows:—

| | |
|---|---|
| Admitted to Hospital .. .. .. .. .. .. | 1,584 |
| Cured .. .. .. .. .. .. .. .. | 1,117 |
| Relieved .. .. .. .. .. .. .. .. | 36 |
| Incurable .. .. .. .. .. .. .. .. | 2 |
| Died.. .. .. .. .. .. .. .. .. | 257 |
| Destroyed .. .. .. .. .. .. .. .. | 46 |
| Remaining under treatment .. .. .. .. .. | 126 |
| Total percentage of all casualties .. .. .. .. | 71·0 |
| " " died and destroyed .. .. .. | 13·5 |

The casualties among the colonial horses from the 1st October, 1878, to the 8th October, 1879, were:—

| | |
|---|---|
| Admitted to hospital | 3,369 |
| Cured | 2,209 |
| Relieved | 279 |
| Incurable | 1 |
| Died | 446 |
| Destroyed | 130 |
| Remaining under treatment | 284 |
| Total percentage of all casualties | 79·0 |
| " " died and destroyed | 14·0 |

For the sake of brevity and convenience I have grouped the various classes of diseases and injuries as follows:

| | English horses. | Colonial horses. |
|---|---|---|
| Fevers, lung diseases, etc. | 152 | 761 |
| Diseases of other internal organs | 543 | 214 |
| Specific diseases | 135 | 628 |
| Diseases of the skin | 39 | 415 |
| " " eye | 14 | 24 |
| " " foot | 84 | 73 |
| Contusions, wounds, and injuries, various | 590 | 1,249 |

Under the head of "specific diseases" 5 English and 66 colonial horses died of, or had to be destroyed for Glanders and Farcy; 26 English and 398 colonial horses were treated for mange; 34 English and 67 colonial horses sustained gunshot wounds, of which 17 of the former and 24 of the latter died, or were destroyed; 253 English and 488 colonial horses were admitted to hospital for saddlery, harness, and heel-rope galls, and 45 English and 197 colonial horses were attacked by that fatal disease, peculiar to South Africa, known as "horse-sickness." Of these animals 205 died and one was destroyed.

Cases of ordinary lameness are remarkably few, while, on the other hand, casualties arising from contusions, wounds, and other injuries were very numerous. Two horses were drowned, 3 died from snake bite, and 19 were poisoned by a species of wild tulip plant, called by the Dutch "tulp"; 11 of these died and 8 recovered.

No casualties from the attacks of the Tsetse fly occurred during the war. At one time this insect caused great losses to farmers and cattle breeders; but of late years it seems to have disappeared altogether from the districts it once infested.

The above statistics suggest two features of interest:—

1. The prevalence of sore backs and other galls.
2. The mortality caused by the so-called "horse sickness."

It will be noticed that the English horses, although more heavily weighted, suffered considerably less in proportion from sore backs than those of the irregular corps. This was probably due, in a great measure, to the use of folded blankets under the saddles, as well as to the care and attention bestowed on the animals by experienced cavalry officers.

In the colonial corps blankets were not carried, owing to the supposition that their value would be insufficient to compensate for the extra weight imposed. The saddlery issued to these troops was purchased in the colony, and proved to be ill-fitting and of inferior quality. The saddles constantly required repairing, but the paucity of saddlers and want of material rendered this, at all times, a difficult matter, and frequently it was impossible to keep

them in a serviceable condition. Hence the number and severity of sore backs amongst the irregular cavalry in Zululand.

As regards the mortality from "horse-sickness," it has already been remarked that this disease is peculiar to South Africa, and is very fatal. It is specific, miasmatic, and septic in its nature, and is due to the presence of a micro-organism very similar in appearance to the germ of Anthrax. The symptoms also of the two affections are somewhat alike, but late experiments have proved that the diseases are not identical.

"Horse-sickness" occurs as an enzootic in the spring and summer months, and generally attacks horses on low-lying ground or near the marshy banks of rivers. It is also prevalent on the sea coast, and is acclerated by those conditions which tend to produce debility and depression of the vital powers.

In the summer of 1882, 5,080 horses embarked with the troops proceeding on active service to Egypt.

Forty-seven of these animals died on the voyage, and the remainder were landed in good condition.

The following casualties occurred from the date of debarkation to 30th November, 1882:—

| | |
|---|---|
| Admitted to hospital .. .. .. .. .. .. | 2,567 |
| Cured .. .. .. .. .. .. .. .. | 1,227 |
| Relieved .. .. .. .. .. .. .. .. | 338 |
| Died .. .. .. .. .. .. .. .. .. | 408 |
| Destroyed .. .. .. .. .. .. .. .. | 104 |
| Remaining under treatment .. .. .. .. .. | 410 |
| Percentage of all casualties .. .. .. .. | 50·5 |
| „ died and destroyed .. .. .. .. | 11·3 |

The majority of admissions (1,313) were, as usual, for surgical diseases, wounds, and injuries, of which 82 were gunshot wounds; 35 of these animals died, or were destroyed, and the rest recovered.

Eight hundred and seventy-six cases of saddle, harness, and rope galls occurred; 4 horses were destroyed for Glanders and Farcy; 282 were admitted for exhaustion and debility; 170 for diseases of the respiratory organs; and 477 for malarial fever.

Very few casualties occurred amongst other classes of diseases; lameness was rare, and no cases of Mange were recorded.

At one period of the campaign the 7th Dragoon Guards had 213 horses on the sick list, the great majority of cases being sore backs, heel-rope galls, and debility.

Out of 518 horses landed in Egypt, this regiment lost 114 from various causes up to the 30th November.

The principal points of interest appear to be:—

1. The excessive number of sore backs and other galls.
2. The outbreak of a specific malarial fever.

It will be remarked that although this campaign was of shorter duration than the Zulu war, the number of sore backs amongst the English horses in Egypt was considerably greater in proportion.

The majority occurred amongst the cavalry, and many cases were caused by the surcingles, which were used in the lines to keep the numnahs in their places, in order to protect the horses' backs from the effects of the sun.

For this purpose it was necessary to buckle them somewhat tightly, and as they were without pads, the pressure upon the spines, especially of those horses which were low in condition, produced abrasions and sores of greater or less severity.

Very many other cases were doubtless caused by direct saddle pressure, as the folded blanket was not used under the saddle during the operations.

The outbreak of malarial fever appears to have been due to the impure state of the ground on which the cavalry and artillery horses were picketed at Abassieh. This ground had been used for camping purposes by pilgrims for ages, and the exhalations arising from the soil, together with the miasma evolved from the flooded land in the neighbourhood, was inhaled by animals whose exhausted condition and loss of vital force predisposed them to contract disease.

The horses employed with the Nile Expeditionary Force were comparatively few in number, and consisted principally of the 19th Hussars—Arab ponies—under the command of the late Colonel Barrow.

It is worthy of notice that, notwithstanding the marvellous amount of work performed by these hardy little animals, casualties amongst them were very few.

The fatal cases from 1st November, 1884, to 5th, July, 1885, were 71 in number, including 20 killed in action and 27 destroyed for wounds and injuries. Only one case of sore back was recorded.

The Suakim Expeditionary Force which embarked in the spring of 1885 included 2,530 horses of all arms—British, Indian, and Australian. Nineteen deaths occurred during the voyage.

In addition to these animals, a considerable number of Egyptian and Syrian horses were purchased for the use of the mounted infantry.

The casualties from all causes from February to 31st May, 1885, were :—

| | |
|---|---|
| Admitted to hospital .. .. .. .. .. .. .. | 657 |
| Cured .. .. .. .. .. .. .. .. .. | 334 |
| Relieved .. .. .. .. .. .. .. .. | 186 |
| Incurable .. .. .. .. .. .. .. .. | 3 |
| Died .. .. .. .. .. .. .. .. .. | 40 |
| Destroyed .. .. .. .. .. .. .. .. | 34 |
| Remaining .. .. .. .. .. .. .. .. | 53 |
| Total percentage of casualties .. .. .. .. .. | 26·0 |
| „ „ died and destroyed .. .. .. .. | 3·0 |

The deaths include 25 horses killed in action or reported "missing." Seven horses were destroyed for Glanders, 50 cases of exhaustion occurred, and 468 were treated for diseases, wounds, and injuries not classified. Amongst these were a very considerable number of sore backs; no less than 68 cases in the 5th Lancers and 23 in the 20th Hussars occurring during the month of April. Saddlery galls were also numerous amongst the horses of the Indian cavalry.

In my official report on the campaign I find the following remarks on this subject:—

"I consider that many of these sore backs might have been prevented had the folded blanket been used instead of the numnah, which was not sufficient to prevent saddle pressure in those instances where muscular wasting occurred from loss of condition."

Bilious and climatic fevers were prevalent, but not to such an extent as to call for special remark.

Although the military operations were of short duration, the climate was a severe trial to English horses, already fatigued by the voyage, and with their winter coats only partially shed; and had the campaign been prolonged through the summer months, the sickness and mortality amongst these animals would probably have been very considerable. The artillery and other draught horses kept their condition fairly well, and were comparatively free from sickness, but, except in two or three instances, they were never subjected to severe exertion, and, being near the base, were always within reach of suitable food, shelter from the sun for their sick, and good water. The cavalry, on the other hand, were, more or less, continually on the move, especially the detachments at the advanced posts, and the horses lost condi-

tion rapidly, many of them becoming very emaciated. The Egyptian and Syrian horses endured the hardships and climatic influences to which they were exposed remarkably well, and those of the Indian cavalry also kept in fairly good condition, although they were somewhat "fine drawn" at the end of the campaign.

I have not thought it necessary to refer to the casualties amongst the horses of the Transvaal and Bechuanaland expeditions, as they were similar in character and extent to those which occurred during the Zulu war, and possess no particular feature requiring special comment.

Having briefly considered what may be termed the historical, or statistical, portion of this subject, we shall now proceed to inquire into the predisposing and exciting causes of some of the principal casualties met with on war service, and also as to the best means of prevention in those cases which are within our control.

I have not attempted to allude to the medical or surgical features of any particular disease or injury, because such a course would obviously be out of place in a paper of this description, even if it were possible to do so in the limited time at our disposal. I have also endeavoured to avoid all matters of a technical nature, and to dwell only upon those points which, if they are considered worthy of discussion, are most likely to elicit opinions of importance and suggestions of practical value.

The casualties prevalent amongst army horses in the field are frequently divided into two divisions, "preventable and non-preventable;" but these terms are scarcely applicable in a literal sense, and are often misleading and frequently incorrect. A casualty may, under certain conditions, be correctly described as "preventable," while, under other circumstances, a similar case will undoubtedly belong to the opposite class.

Again, an outbreak of sickness may occur amongst the horses of an army, and although the original cause may be distinctly non-preventable, yet the range and extent of the malady may be so far under our control that the application of scientific knowledge, practical experience, and common sense will speedily arrest its progress, and eventually stamp it out.

I think, therefore, the best and simplest plan will be to consider the subject under the following groups or classes.

*Specific, Malarial, and Climatic Fevers.*

The outbreaks of "horse-sickness" in South Africa, and "malarial fever" in Egypt, to which I have already referred, will serve to illustrate this particular class.

Climatic fevers are, more or less, prevalent in all countries of a tropical or semi-tropical character, and their evolution is invariably accelerated by those conditions which tend to produce debility, or depression of the vital powers; consequently, if horses are massed in considerable numbers on impure or low-lying ground near marshy or flooded land, while suffering from such predisposing influences as the result of overwork, insufficient or unsuitable food, etc., it is highly probable that an outbreak of some form of malarial sickness will occur amongst them.

The preventive measures to adopt are indicated by the cause.

If the exigencies of the military operations will admit of it, all such localities, especially for camps of position, should be avoided, as well as ground from which scrub, trees, or other vegetable growth have lately been cleared. When practicable camps should be pitched at least fifty feet above the level of running water. Frequently, for tactical and strategical reasons, it is absolutely necessary to picket the horses of mounted troops on ground in the neighbourhood of swamps or marshes, in which case the site selected should, if possible, be to windward of the prevailing breezes.

The above remarks, with reference to the selection of camping ground, are equally applicable to cases where malarial disease has already made its appearance. Affections of this nature are often effectually suppressed by prompt change of locality.

*Contagious Diseases.*

*Glanders, Farcy, and Mange* are the only diseases of this class to which I need refer. The two former are identical affections, differing only in their local manifestations. Glanders has from time immemorial been the scourge of armies in the field, and in former times the losses from this fatal disease were enormous.

I have already remarked upon the prevalence of Glanders in the Crimea, and have also referred to its outbreak in our more recent campaigns. In the latter, however, the cases were comparatively few in number, and owing to the precautions taken, the malady was always promptly suppressed.

Writing on the prevalence of Glanders in the German Army, during the Franco-Prussian War, Dr. Fleming remarks, in his work on "Veterinary Sanitary Science and Police," that "the magnificent German cavalry took the field after every care had been exercised that no glandered horses should be in the ranks, and yet, at the end of the campaign, every regiment, it is reported, was more or less infected."

The same writer also refers to the presence of Glanders during the Franco-Italian struggle with Austria, and to the havoc it created amongst the Tartar ponies during the war in North China.

Mange is a contagious skin affection, due to the presence of a parasite, and used to be one of the most troublesome and formidable maladies with which the military veterinary surgeon had to contend during a campaign.

The chief factors which favour the development and extension of this disease are exposure to cold, tempestuous weather, exhaustion, debility caused by fatigue, insufficient food, and the numerous hardships and privations incidental to a prolonged campaign.

Not only were many hundreds of horses affected by Mange during the Crimean War, but the mortality amongst them was very great.

Beyond the cases which occurred during the Zulu war, our army horses have been singularly free from Mange in recent campaigns.

I refrain from alluding to the measures to be adopted for the prevention and suppression of these and other contagious diseases, as this is a question more particularly for the Army Veterinary Department. All I need say is that in future wars everything that experience can suggest, or science indicate, will be done by those who are responsible for the efficiency of our troop horses, to prevent a repetition of the calamities that occurred in the Crimea.

*Dietetic Diseases.*

Casualties arising from diseases of the digestive organs are oftentimes numerous on active service, and are caused chiefly by irregular feeding and watering, insufficient, indifferent, or improper food, and bad water.

During the Zulu war many cases of intestinal disease occurred from the above causes, especially amongst the English horses, which were unaccustomed to the coarse, and often indigestible and innutritious, grass met with in some localities.

It is recorded that during the Franco-Russian war of 1812 the French cavalry lost upwards of 1,000 horses in a single night from eating too freely of green clover.

All sudden changes of diet should be avoided, and when it is absolutely necessary to issue forage to which the horses have hitherto been unaccustomed, such food should always be given sparingly at first, and gradually increased.

This rule particularly applies to barley, maize, beans, and peas. In a grass country the same precautions should be observed with regard to grazing.

It is essential that horses should be allowed to drink freely and as often as they are so inclined, provided that the water is of good quality; but all stagnant water, fouled by decomposing animal or vegetable matter, should be avoided.

In these days of portable compressed forage and improved means of transport, it is probable that in our future campaigns there will be a marked diminution of casualties from dietetic diseases.

*Exhaustion.*

Casualties resulting from exhaustion are frequent on service, and are due to causes over which we have little or no control, such as rapid or forced marches, extended operations over hilly, mountainous, or boggy ground, or through deep sand, and occasionally to the physical unfitness of individual animals. This latter cause is, however, comparatively rare, owing to the care exercised in the selection of horses prior to embarkation.

During the march from Tel-el-Kebir to Cairo in 1882 many horses suffered severely from exhaustion, especially those belonging to the Commissariat and Transport Corps. These animals had to draw heavily-laden carts through the deep sand of the desert, and it was doubtful at one time if they could reach Cairo. The Veterinary Officer in charge remarks:—"Several horses died from utter exhaustion, and pulmonary congestion, caused by the excessive nature of the work, heat, want of food, and the many hardships they endured. . . . . On arriving at Gazireh, out of 140 transport horses, seventy-five had to be struck off duty, nearly all for debility and lung affections. Some of these animals were so weak that they could not walk to the watering place, and several more deaths occurred."

*Diseases of the Lungs and Air Passages.*

Casualties from these causes depend in a great measure upon the nature of the climate, and the conditions under which the animals are placed. Extremes of temperature, and exposure to cold and inclement weather are the chief factors in the production of these affections.

A congested condition of the lungs is frequently caused by severe exertion, especially during hot, close weather; but casualties from diseases of this class have not been remarkable, either as regards number or severity, in our recent campaigns.

*Lameness.*

Owing to the fact that none but serviceably sound horses are allowed to proceed on service, cases of ordinary lameness in the field are, as a rule, remarkably rare.

*Wounds and Injuries received in Action.*

*Gunshot* and other wounds received in action are altogether beyond our control, and depend in character and extent upon the nature and conditions of the military operations. Further remarks upon this class are unnecessary.

*Surgical Diseases and Accidents.*

Casualties of this description are perhaps more numerous amongst the horses of an army in the field than those of any other class. They include the various kinds of wounds, contusions, fractures, sprains, heel-rope galls, etc. I have purposely omitted saddlery and harness galls from this class, as the subject of sore backs is one of the most important of all with which we have to deal, and therefore deserves special consideration. Wounds and injuries occurring in the lines are, as a rule, caused by rope galls, or by kicks from other horses, and

vary in severity from the ordinary contusion to the fracture of a limb. Very many of these cases are of a temporary character, simple enough in themselves and easily cured; but frequently they are so numerous as to seriously menace the efficiency of the mounted troops. Hence, prevention becomes a question of importance, and, in considering the best means to adopt in order to ensure a diminution of these injuries, it will be necessary to allude briefly to the subject of

*Picketing.*

Within the last few years several systems of picketing have been advocated, and have been tried with more or less success, but I am not aware that any plan has hitherto been so satisfactory as the ordinary ground line, with head- and heel-ropes. Assuming that this arrangement affords the best means of securing troop horses in camp, the chief points for consideration are the precautionary measures necessary in order to protect the animals as far as possible from injury.

*The ground rope*, whether entire or interrupted, should be made of the best material so as to combine lightness with strength and durability. It should be well stretched, and firmly pegged down, the pegs being driven flush with the ground in order to prevent injury to the horses when lying down. The ordinary wooden peg is liable to break, and is often a source of trouble on service, and might, with advantage, be superseded by a light iron peg with a solid head, and riveted collar for the attachment of a link of chain. Pegs of this description were used with complete success in South Africa, and, although exception may be taken to the extra weight, the increase would be inconsiderable, and would be fully compensated for by the superiority of the iron peg, especially for standing camps.

When picket-pegs cannot be used, owing to the light, sandy nature of the soil, a buried stone, brick, or log of wood well rammed down, will answer the purpose.

*Heel-ropes* are necessary, at all events during the earlier part of a campaign, and it is questionable whether it is prudent to dispense with them altogether at any time. Certainly, horses soon become used to the picket lines, and are naturally quieter and more tractable after a period of constant hard work. Many experienced Officers consider that heel-ropes may be discarded with safety after a time, and we have instances on record in support of this view. During the Boer War of 1881 the Inniskilling Dragoons and mounted Engineers very soon discontinued the use of heel-ropes, and with satisfactory results. Of course, no horse known to be vicious would be left in the lines unsecured. Such animals should, under any circumstances, be picketed by themselves. There are, however, many horses in the ranks not absolutely vicious, but with an inclination to kick on the slightest provocation, and unless these animals are properly secured by the heels, they are very likely to inflict serious injuries on their neighbours; especially after a few days of rest and inaction.

If heel-ropes are properly adjusted, they cause little or no inconvenience, while, as a safeguard against casualties their value is unquestionable.

I do not, of course, contend that horses thus secured are incapable of inflicting injury, but I know from experience that under such conditions casualties will be considerably fewer in number, and much less severe. As all undue weight must be avoided, it is necessary that heel-ropes should be made of the best material, and in this respect those which now form part of our equipment might easily be improved upon. Many a serious casualty has been caused by the breakage of a heel-rope. The shackle should be carefully fitted, and placed *below* instead of above the fetlock, except in those cases where the presence of cracked heels or abrasions renders it necessary to alter the position.

Referring to the subject of heel-ropes, the Veterinary Officer attached to the 7th Dragoons Guards in Egypt, writes :—"The cases of galled heels would not have been nearly so numerous if the heel-ropes supplied at Cairo had been of better quality, but they were so thin that they easily broke, and the horses got their heels over the head ropes. Up to the 23rd of October, when these inferior heel-ropes were issued, none had been carried by the regiment, and therefore no means existed of preventing the animals from turning round and getting their heels over the picket line and head-ropes of neighbouring horses. Numerous and severe galls were thus caused, rendering the animals quite unfit for duty for weeks.

"The Royal Artillery from India had their heel-ropes with them throughout the campaign, and they, therefore, had fewer cases of heel gall than the other mounted troops which came under my notice. It is most essential that heel-ropes for every horse should be carried, as nothing renders a horse so utterly useless for duty as a bad heel gall."

The fitting of the head and heel ropes should be uniform, and so arranged as to allow the animals as much freedom as is consistent with security. If the head-rope is too long, injuries will probably be caused by the horse's forefeet becoming entangled, and also from bites.

Uniformity should also be observed in securing the head-ropes to the picket line, which should be done by a simple *clove hitch*. By this method, *lateral* slipping is prevented, the knot is perfectly secure, and can be easily and quickly untied even during wet weather.

*The head collars* should be carefully and securely fitted, so that they cannot be slipped.

It is advisable that as much space as the arrangements of the camp will admit of should be allowed between each horse on the picket lines.

### *Sore Backs.*

Casualties resulting from saddlery and harness galls are perhaps the most important of any with which we have to deal ; not only on acconnt of their extreme frequency, but also because the majority of the cases which occur on service can, and ought to be, prevented. When we consider the vast number of horses which were rendered temporarily useless from injuries of this description, during the brief military operations in Egypt, and think of what the consequences might have been had the campaign been indefinitely prolonged, it must be admitted that the subject of Sore Backs demands the earnest and immediate attention of those who are responsible for the efficiency of an army in the field.

I regret that time will not permit me to do more than briefly refer to some of the principal points in connection with the causes and prevention of sore backs; but the subject is one of such magnitude that it is impossible to deal with it in complete detail in my present paper.

Referring to the severity of the cases of sore back amongst the horses of our cavalry in Egypt, the Veterinary Officer attached to the 7th Dragoon Guards writes :—

"The sore backs and fistulous withers were the worst I have ever seen, and several horses were destroyed from these causes, as it was impossible to cure them. Some of the cases began early in the campaign, but it was impossible to treat them effectually, as the horses could not be relieved from duty."

All military officers are aware that the exigencies of war service sometimes demand extraordinary exertions on the part of cavalry, and that there are occasions when it is absolutely necessary that every available horse should be in the ranks. A sore back is no excuse. It is in instances of this sort that practical experience and a thorough knowledge of the art of saddle-fitting

are of inestimable value. By the exercise of a little mechanical ingenuity, many horses with galled backs have been enabled to carry their riders on an emergency without undue suffering to the animals, or adding to the severity of the injuries.

*Causes and Prevention of Sore Backs.*

For the sake of convenience, and in order to avoid repetition, it is desirable that we should consider the two subjects, "*Cause and Prevention*," under one head.

The principal causes of sore backs are:—

1. The faulty position of the saddle.
2. The defective condition of the saddlery.
3. The accidental presence of foreign matters under the numnah.
4. Careless saddling.
5. Careless riding.
6. The weight and distribution of the accoutrements.

*The Saddle.*—As you are aware, the present cavalry saddle was adopted on the recommendation of an influential Committee, after long and mature deliberation, but whether it answers all the requirements of the Service, or whether it might be improved upon, are questions scarcely within the scope of this paper, although they are well worthy of consideration. We have merely to deal with the saddle as it is; to inquire into the conditions which render it a source of injury to horses' backs; and to suggest the adoption of such preventive measures as are best calculated to meet each particular case.

Sore backs may be divided into injuries to the withers and injuries to the back proper.

*Injuries to the withers* occur from the front arch of the saddle, or the edge of the felt numnah pressing upon the part, and are caused either by the arch being unduly wide and allowing the saddle to rest on the top of the withers, or by its being too narrow and pinching the sides. In either case it is obvious that the saddle does not fit, and should be changed; but if this is impossible, the evil may be remedied by the use of a blanket, folded the requisite thickness, and in such a manner as to relieve the parts from pressure.

*Injuries to the back proper* may be caused by irritation produced by badly-stuffed panels, damaged numnahs, ill-fitting side-boards, careless riding, pressure from the valise kit, long and continuous saddle pressure, removing the saddle too soon after the man has dismounted, and from such accidental causes as breakage of the tree or leather work.

The remedies to a certain extent suggest themselves, but there are several important points worthy of notice.

A saddle which fits a horse in "barrack yard condition" soon ceases to do so on active service in the field, for the simple reason that hard work and short rations cause loss of flesh, and this muscle-wasting materially alters the conformation of the back; consequently, the saddle becomes a misfit, and the protection afforded by the numnah is totally insufficient to prevent its galling the back or withers. Here, again, the folded blanket is invaluable, but if this is not available, a second numnah may serve the purpose. Re-stuffing the panels is a remedy which must not be overlooked; but this is not always possible on service, and in any case can only be temporary. Plaited straw mats have been recommended for this purpose, and when properly "chambered" have been advocated for the protection of galls. I am, however, unable to say anything as regards their practical value from personal experience.

*Chambering the panels* is often resorted to, in order to relieve a gall from saddle pressure. This is done by removing a portion of the stuffing from

that part of the panel which is in contact with the wound, and cutting a corresponding hole in the numnah. My experience of this plan has been the reverse of satisfactory, and I do not recommend it as a remedy.

*Injuries from badly fitting side-boards* occur principally from two causes. A straight-backed horse requires straight side-boards, and if these are unduly curved the pressure will be directed to one point—the centre—and the saddle will have a tendency to rock. If, on the other hand, straight side-boards are fitted to a hollow-backed horse, undue pressure will be caused by the front points and rear fans, and the saddle will oscillate. In neither case can an even bearing be obtained, and a sore back is a certainty.

A change of saddle is the only proper remedy, but if this is not possible the folded blanket may be used with advantage.

*Shifting of the saddle* is nearly always in a forward direction, and may arise from either of the above causes, or from defective conformation, such as a shallow chest, low fore-hand, high loins, and excessive arched ribs.

It is a difficult matter to keep the regulation saddle in its place on a very short-backed horse, because the rear fans project so far back upon the loins that the saddle is pushed forward by the action of the muscles, and the front points of the side-boards will interfere with the free play of the shoulder-blades. The remedy is to cut off the points of the side-boards, front and rear, and to screw on curved iron plates. This plan will probably succeed in cases of saddle shifting from other causes.

A broad Cape or Australian girth, made of plaited raw hide, may be substituted for the ordinary girth with advantage.

Galls from frayed or chafed numnahs, or from accumulations of sand, dirt, and dried perspiratory matter are common enough on service, and can only be avoided by the exercise of care and vigilance on the part of officers, non-commissioned officers, and men, and by a systematic course of saddlery and back inspections.

The prevention of casualties from careless saddling and careless riding is also to a great extent in the hands of the regimental authorities.

*The weight and distribution of the accoutrements* are points which I approach with a certain degree of diffidence, because I am aware that the subject of saddle equipment has been thoroughly and exhaustively considered from time to time by experienced cavalry officers, and has lately been settled on the lines laid down by the saddlery committee. I venture to submit, however, that the weight imposed upon the troop horse, in marching order, by the miscellaneous articles comprising the soldier's kit, is a powerful factor in the production of sore backs, and that if all superfluous weight could be otherwise carried—say, in light troop carts—the number of non-effective horses on service would be considerably reduced.

As regards the distribution of the saddle equipment, I have had the privilege of inspecting from time to time the excellent and practical arrangement for carrying the kit devised by Lieutenant-Colonel Hutton, for the use of the mounted infantry at Aldershot, and have often thought that if a similar system could be adopted by cavalry regiments it would be a great boon both to the soldier and his horse. The principal weight being carried in detachable saddle bags, which hang below, and in a line with the centre of gravity, the fore-hand and loins of the horse are relieved of the mass of dead weight at present carried in front and in rear by the cavalry trooper.

As Colonel Hutton remarks in his paper on mounted infantry, "Fatigue is saved to the soldier and the minimum of inconvenience is caused to the horse."

I trust that I may not be deemed out of order in referring to this subject, but I think it is one well worthy of consideration. The saddle is of the American pattern, and rests upon the man's neatly-folded blanket.

*Girth galls* are caused by the saddle shifting forwards, by the girths becoming stiff and hard from perspiration, and by careless saddling. The remedy is to change or refit the saddle, and, if possible, to use a split or raw hide girth.

*Crupper galls* are caused by an unduly tight crupper. This article of saddle furniture is at all times a useless encumbrance, and might advantageously be dispensed with on service.

The same remarks will apply to the breastplate.

*Carabine-bucket and sword galls* are frequently met with on service, but these injuries are never, as a rule, severe, and can be remedied by slightly altering the position of the weapons.

*Surcingle galls* are often very numerous, and sometimes severe. The cause has already been alluded to in my remarks on the cases of sore back in Egypt. A very simple and effective remedy is to place a pad of hay or grass on each side of the spine, under the surcingle, if ordinary stuffed pads are not available. A surcingle should never be *knotted* to reduce its length.

*Collar and harness galls* are neither so frequent nor so severe as those caused by the saddle, and do not require special mention. If a collar becomes too large as the result of a horse falling off in condition, the best remedy is to pad it with strips of numnah felt. The same method can be adopted to save a gall from pressure. *Chambering* the collar for this purpose should be avoided, as it is practically useless.

*Blankets.*—From what has already been said it will be concluded that I am a strong advocate for the folded blanket under the saddle, on service. Much difference of opinion exists on this point, and the following objections to the blanket have been advanced :—

1. The trouble and difficulty in folding it in the dark.
2. Its tendency to slip from under the saddle.
3. Careless and uneven folding, causing sore backs.
4. The extra weight.
5. Its liability to become saturated with wet, and covered with mud.

Experience has proved that the first three objections are absolutely untenable. If a blanket is properly folded it will retain its place under the saddle, and soldiers can be taught in a few lessons to do this with ease, rapidity, and without wrinkling it, even in the dark.

A blanket sufficiently stout in substance is certainly somewhat heavier than a numnah, but I consider that the slightly additional weight is more than compensated for by its many advantages. As regards the fifth objection, Inspecting Veterinary Surgeon Lambert, writing on the subject of sore backs in South Africa, says :—"Another objection, and, I think, the only one that requires seriously to be met, is that the blanket, when on the horse during the night, may be rolled on if he is down, and that it may, if the weather be wet, thus be saturated or partly covered with mud. . . . . This looks a formidable business, but it is only so in appearance. The blanket can rarely get so muddy as all that : the number of wet days is really few, and a blanket does not take so long to dry as is supposed." Referring to the many advantages of the blanket, this officer continues :—"We found, in the 17th Lancers during the Zulu campaign, the following to be the advantages of the blanket. It furnished a much-wanted warm covering for the horse at night. Horses often fall away in condition very rapidly at first during a campaign, so much so that the saddles which fit them well in barracks will become much too large, and consequently a prolific source of sore backs. A numnah has very little effect in compensating for this reduction of condition; but the blanket I recommend can be doubled as often as necessary, and so the saddle by this means can be made to fit. . . . . The men of the 17th Lancers were constantly obliged to fold their blankets, and saddle in the dark; but I do not remember our attri-

buting any 'backs' to wrinkling or bad folding. . . . . If the nights are cold, I consider a good large blanket equivalent to an extra feed of oats per diem in saving expenditure of animal heat, and, in addition, there is the gain in comfort to the horse. . . . . I recall to mind many instances where, a sore back having occurred with a numnah, a blanket was ordered, and the injury gradually got well without the horse's work being stopped."

The above remarks are the outcome of actual personal experience in the field, and go far to substantiate what has already been said with reference to the superiority of the blanket for active service. Not only can the blanket be folded in various way to suit nearly all conditions of backs and saddles, but by varying its thickness at different points a gall can be so protected from saddle pressure that the horse, which would otherwise be non-effective, can be ridden with impunity. The numnah is valueless for this purpose. As regards the use of the blanket as a warm covering for the horse at night, it may be argued that the man will probably appropriate it for himself. He certainly may do so; but then the loss to the horse is a gain to the man, whereas the numnah is of very little use to either for this purpose.

*Inspections of Backs and Saddles.*

Frequent inspections of backs and saddles are necessary at all times, but especially are they of urgent importance on service. The horse's back is a highly sensitive structure, and oftentimes a very serious injury will arise from a very small cause. The hand should be passed carefully along the back of every horse daily, both in the direction of *and against the hair*, and any deviation from its natural condition should be at once noted and reported. These inspections should include all parts of the animal which come in contact with any portion of the saddlery or accoutrements. The smallest swelling, or accumulation of dried perspiration or scurf, may, if neglected, occasion a severe sore; and therefore the necessity for care and vigilance in making these inspections cannot be too strongly impressed upon all concerned in the welfare of our troop horses.

The above remarks will apply to the daily inspection and fitting of saddlery.

In conclusion, I am desirous of drawing attention to the advisability of establishing a systematic and thoroughly practical course of training in the details of saddle-fitting, for the prevention and relief of sore backs, throughout our mounted services.

Not only officers, but every non-commissioned officer and man ought to know something about the structures upon which the saddle rests, the varieties of conformation, the causes which operate in the production of sore backs, and the expedients to adopt in order to prevent and relieve these injuries. How many men in a cavalry regiment know how a blanket should be folded to meet the various requirements of horses on active service? Very few, I fear; and yet this is a duty they may be called upon to perform at any time.

The subject of saddle-fitting has been exhaustively dealt with by General Sir F. Fitzwygram in his pamphlet on "Saddling of Cavalry Horses," and also—from a veterinary point of view—by Professor Smith, of the Army Veterinary School, Aldershot, in a series of articles published in the "Quarterly Journal of Veterinary Science in India," 1883-4. The principles laid down are clear and sound, and as aids they are very valuable; but to be of real use they must be practically applied, and this can only be accomplished by a thorough course of training under competent instructors.

## MAY GLANDERS BE INOCULATED THROUGH THE INTACT SKIN?

BY PROFESSOR NOCARD, DIRECTOR OF THE ALFORT VETERINARY SCHOOL.

In June, 1888, M. Babes, director of the Bucharest Bacteriological Institute, communicated to the Paris Academy of Medicine a histological study of certain cutaneous lesions observed in Glanders in man, and especially of a papule which, according to the assertions of the person affected, had appeared as the initial accident, without any alteration in the continuity of the epidermis and without ulceration. From this investigation, Babes believed it might be concluded that the bacilli of Glanders, deposited on the healthy skin and introduced by friction into the hair follicles, might multiply there, dilate the follicles, insinuate themselves between the disjoined epithelial cells, and penetrate the cutaneous lymphatics, whence they could become spread over the body. Accepting the correctness of this interpretation, Babes announced that friction made with a pomade containing Glander bacilli of pure and recent culture, sometimes succeeded in producing the disease in some of the guinea-pigs experimented upon. M. Cornil and myself were delegated to examine the note sent by Babes. According to M. Cornil, the examination of the histological sections forwarded by Babes admitted of no doubt and justified his hypothesis. The hair follicles could be distinctly seen stuffed with young Glander bacilli, and from the follicles they could be detected insinuating themselves between the epithelial cells in order to gain the lymph paths in the adjoining connective tissue.

The experiments which I have made are happily reassuring, and show that the danger signalised by Babes is not very serious, as the merest attention to cleanliness will suffice to avert it. We may judge of this by the following *resumé* of these experiments:—

I. On June 28th, one of the guinea-pigs sent by M. Babes died from Glanders: suppuration of the inguinal gland and the sublumbar glands; very small white spots on the spleen, liver less affected. From the splenic pulp and pus from a sublumbar gland (both rich in bacilli), cultivations were made at 35° Cent., on gelose and potato. On July 2nd, a culture on potato was triturated in a mortar with a little liquid vaseline, and a portion of the emulsion thus obtained was applied to the skin on the inner surface of the thigh of an adult guinea-pig, where it was rubbed in for a long time by the index finger (which was protected by india-rubber), so as to cause it to penetrate the glands and hair follicles in the skin. Two other guinea-pigs, adults and vigorous, were successively treated in the same way. Short-haired animals were selected, so as to dispense with shaving the skin where friction was to be made, and to avoid as much as possible causing wounds or excoriations which might afford admission to the bacilli. Of these three guinea-pigs one became glandered. On July 7th, an ulcerous sore developed at the flank, and the inguinal gland was enlarged, indurated, and painful on pressure. On July 10th, this gland was the size of a large haricot bean, and was fluctuating; puncture by means of a fine trocar yielded thick creamy pus rich in bacilli. The animal was killed on the 17th July, and the ordinary lesions of Glanders were found. There was hypertrophy and suppuration of the sublumbar glands, and the spleen was infiltrated with an infinite number of small white points swarming with bacilli. This spleen served to make new cultures on gelose and potato.

II. On July 19th, a culture on gelose (forty-eight hours in the stove at 35°) was employed on the skin of three guinea-pigs, male adults and very strong, as before. The glander emulsion was also rubbed into the forehead of an ass, the hair having been cut short by scissors, but not shaved off. Neither ass nor guinea-pigs became affected with Glanders.

III. On September 7th, 1888, with a culture forty-eight hours old—derived from an ass which had died six days after inoculation with the discharge from

the nostril of a horse suspected of Glanders—five short-haired male guinea-pigs were treated as the others had been, on the inner side of the right thigh; as well as a small ass on the forehead, the hair having been clipped off.

Only one of the guinea-pigs became glandered. On September 11th, the scrotal region appeared to be tumefied and the testicles larger or more salient. Palpation, though painful, did not cause retraction of the testicles into the abdomen. The scrotum was red, tense and shining. On the 12th, an ulcerous wound was seen on the inner face of the triceps, and the inguinal gland was treble its normal volume and indurated. On the 16th, there was an abundant suppuration of the inguinal gland and the right vaginal sheath. On the 22nd, the animal was killed, when there were found hypertrophy and small purulent foci in the sublumbar glands; very fine white confluent spots in the spleen; lungs normal; intense inflammatory lesions in the testicular envelopes.

The ass remained healthy.

IV. On September 27th, 1888, with the product of a culture on potato, five days old, derived from the guinea-pig referred to above, four new guinea-pigs were treated in the same manner as the others, also the ass which had resisted the former experiment. None of these animals became affected with Glanders.

To resume, the three asses resisted inoculation, and of fifteen guinea-pigs only two succumbed.

These results are very assuring. When the ass resists, man does not incur much danger; and it is not improbable, notwithstanding all the precautions taken, that in the two guinea-pigs which became glandered there was some excoriation which escaped notice, or that after the rubbing the animals had scratched the skin with their claws, or some stalk of straw had done so.

As already remarked, to avert the danger pointed out by M. Babes, it is only necessary to wash and keep clean parts soiled by the virulent products of Glanders.

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## DISAPPEARANCE OF GLANDERS FROM AMONG BRITISH ARMY HORSES.

DURING last year there was not a case of Glanders among the horses of the British army, this being the second year in which such immunity has been reported. In many barracks the stables are pretty much the same as when the disease was a perfect scourge, and there is certainly no difference in the forage. This and other facts now accumulated with regard to Glanders, prove conclusively that the malady cannot be spontaneously generated, and that its advent is always due to contagion.

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## THE CURE OF ROARING BY ARYTENOIDECTOMY.

AT the meeting of the *Société Centrale de Médécine Vétérinaire* in last April, M. Cadiot, Professor of Surgical Pathology and Clinic at the Alfort Veterinary School, drew attention to the curative operation for Chronic Roaring, and described two cases in which that condition had been completely removed. He said: "Some months ago I operated upon six horses affected with Chronic Roaring (*Cornage Chronique*), due to paralysis of the left laryngeal muscles, but at this moment I have not the necessary information at hand to allow me to make known the definite result. That which I am desirous of establishing, is that this affection, still actually considered as incurable by many veterinary surgeons who have only a mediocre confidence in the operation, may be completely cured by the ablation of the paralysed arytenoid. Here are two facts in proof.

"1. On January 19th, at Ressons-sur-Matz, with a *confrère* in that locality,

I operated upon a light draught gelding, aged seven years, which made a great noise after being slowly trotted for a few moments. On March 12th, my *confrère* informed me of the result of the operation as follows: The wound is completely cicatrised, and there only remains a linear mark on the inferior surface of the larynx, which will no doubt completely disappear. On Sunday I put the horse into harness and exercised him at a trot; at first he coughed several times, but after travelling about two kilometres the coughing disappeared; the Roaring was not perceptible. The next day he was driven for ten kilometres without coughing or making the slightest noise.

"2. On January 21st, our *confrère*, M. Lenglen, sent a Percheron gelding, twelve years of age, to Alfort. It was so badly affected that after a few moments' trot, or even at a fast walk, it made a great noise. Even when at rest in the stable it sometimes made a noise. The horse was operated upon on February 9th, and left the hospital on April 2nd, when the wound was quite healed and the Roaring had almost entirely disappeared. He was immediately put to work, and the following is a letter from M. Lenglen, dated April 22nd:—'Your patient gets on as well as possible. He does not Roar, does his work as usual, and nothing is to be seen of the operation except a slight adhesion of the skin to the subjacent tissues over the larynx. I may add that I have not been able to detail a special man to look after him, as you recommended, and he has been treated and worked like the other horses. From the day after he left Alfort he has taken his old place, and has not made the least noise during the most violent exercise (*il ne fait pas entendre le moindre bruit de Cornage apres les exercises les plus violents*). If you desire to examine him, you may see him one of a pair drawing an omnibus weighing 12 cwt. loaded with thirty passengers, whose average weight is eleven stone, going along at the ordinary trot of our horses.'

"I sincerely believe that the foreign veterinary surgeons who have related cases of complete and durable cures of Roaring have not exaggerated, and I hope that from now we shall be able to collect in France sufficient instances to convince the most incredulous. In any case, art is no longer impotent to deal with Chronic Roaring, and the possibility of a perfect cure of this affection by skilled surgical intervention is to-day beyond doubt."

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## MILK AS A CULTURE MEDIUM FOR THE TUBERCLE BACILLUS.*

BY DR. ABBOTT.

It has been repeatedly demonstrated by reliable authorities, that the milk from tuberculous cattle may contain tubercle bacilli.

Bollinger, Bang, Zschokke and Ernst claim to have found the organism in the milk of cows in which no tuberculous lesions could be demonstrated in the udder.

Hirschberger gives as a result of his investigations, that in 33 per cent. of cattle with Pulmonary Tuberculosis the bacillus of the disease was present in the milk.

In a recent series of experiments made at the Imperial Health Bureau at Berlin, the tubercle bacillus was found to retain its vitality for a period of ten days in milk, thirty days in butter, fourteen days in cheese, and fourteen days in whey.

With these facts in view the question arose—Do the organisms multiply in these media or do they simply lie dormant?

My experiments with milk demonstrate that the organism not only retains

* From the Johns Hopkins Hospital *Bulletin.*

its vitality in milk, but may increase and multiply to an extent quite equal to that seen when other artificial media are employed.

In these investigations ordinary milk as it comes from the shops was employed. No attention was paid to its reaction. As the organism apparently grows best when exposed to oxygen it was, of course, necessary that some agent which would render the milk solid should be added. For this purpose agar agar, which of itself offers no nidus for the growth of the organism, was added to the milk in the proportion of 1 per cent. The whole was then sterilized and placed in tubes and allowed to solidify in the way commonly employed for blood-serum tubes. The tubes of solidified milk were then inoculated from a pure culture of the organism which had been growing on 6 per cent. glycerine agar agar and then placed at the temperature of the body (37.5° C.). After the usual time growth began and, as you can see in the tubes before you, is now progressing in as favourable a way as one ordinarily sees this organism.

The conclusion then from these experiments, in connection with the results of other observers referred to, is that the milk of these cattle not only may contain the tubercle bacillus but that the organism retains its vitality and may even increase and multiply in numbers, under favourable conditions. With few exceptions, in this country, the use of uncooked milk is the rule and there can hardly be any doubt that a certain amount of infection takes place in this way. The evidence in hand certainly contra-indicates the practice and suggests some remedial steps.

The sterilization of milk for domestic use is a simple matter and should be insisted upon. It may be accomplished in two ways—by boiling and by steaming—the latter is the preferable method as it causes less alteration in the milk. It may be accomplished as follows: place the milk to be used in a clean flask or in several flasks, depending upon the quantity needed, plug the mouths of the bottles with raw cotton and steam in the ordinary steamer found in every kitchen for a period of not less than thirty minutes, the time to be reckoned from the beginning of boiling. By following the directions carefully, the organism will be rendered inert, and a step in the prophylaxis of the disease will be accomplished. When one considers that one-seventh of all deaths are from Tuberculosis, it certainly seems incumbent upon us to take all measures in our reach to try and lessen this proportion.

As to the experimented presented, after a somewhat hasty review of the literature I am unable to find any report of a similar series of experiments with milk. Whey, whey-gelatine, and whey-agar have all been employed, but so far as I can learn the employment of milk alone as a culture medium for the tubercle bacillus is unique.

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## ACTINOMYCOSIC TUMOUR IN THE PHARYNGEAL REGION.

In the *Journal de Med. Vet. et de Zootechine* for October last, M. Guinard describes the case of a cow of the Charollaise breed, which on being sent to the slaughter-house to be killed, was observed to have a large soft swelling on each side of the head in the parotideal region, as well as in the intermaxillary space. After slaughter, Guinard carefully dissected the swollen parts, and discovered that the subparotideal connective tissue, the supero-posterior part of the intermaxillary space, as well as the pharynx itself, were surrounded by a yellowish lardaceous tissue containing purulent foci in its substance. The supero-posterior wall of the pharynx was ulceratad, the margins of this ulceration projecting into the pharyngeal cavity; there was a communication, by means of a sinus, between the pharynx and the deeper part of the enlargement, the ulcer being the orifice of the sinus. Microscopical examination of the yellow caseous pus contained in the softened parts of the tumour, readily revealed the presence of colonies of Actinomyces.

## TETANUS IN THE PIG.

CLAVERIE, in the *Revue Vétérinaire* for November last, alludes to two pigs which had been recently castrated, the wounds not having yet cicatrised, and which presented the classical symptoms of Tetanus. The head was carried high, the neck was rigid and the trismus intense. The limbs were rigid and wide apart, and there were frequent attempts at micturition. Treatment was of no avail, and the animals soon perished. An autopsy revealed no appreciable lesion. Claverie was inclined to attribute the occurrence of the disease to the instruments of the castrator, these having conveyed infection; but on inquiry it was elicited that this could not be the case, as the operator had lost no animals from Tetanus. Neither could the equine origin of the malady be invoked, as the owner of the pigs had no horses or asses, and horse manure had never been laid on the land within the memory of man. Besides, horses were rare in the district, and there had been no case of the disease seen for a very long time.

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## TWENTY-SIX PIGS POISONED BY BRINE.

THE poisoning of pigs by salt brine has been frequently reported, and even sheep have succumbed to the effects of this solution. Lamoureux, in the *Recueil de Med. Vétérinaire* for last June, contributes another instance of brine-poisoning in pigs which is instructive. He was called in to see a number of these animals on 4th July, 1889, as the owner believed them to be suffering from poison. There were fifteen in the piggery, and fourteen of them were ill. The feed of the previous evening had not been entirely consumed, and during the night four pigs had shown serious symptoms; they died on the following evening. The symptoms appeared at different intervals during the twenty-four hours after feeding on the evening of the 3rd; they were at first loss of appetite; then the animal became very uneasy, kept turning in the stye and leaning against the wall, and emitting plaintive moans; sometimes it assumed the bipedal position, standing up on its hind legs against the wall. In two or three hours it assumed the sterno-costal or lateral position, maintaining it quietly for from two to six hours, according to the gravity of the attack. Respiration was slow, and the creature did not appear to suffer until the final stage arrived; then the symptoms became acute, veritable nervous crises, simulating epileptiform seizures, ensuing. The muscles of the lower part of the head were convulsed, the convulsions increasing in frequency and intensity, the animal also sitting up like a dog; the respirations were hurried; there was champing of the jaws, the eyes pirouetted in the orbits, the head jerked, and the muscles of the face acted as if under the influence of an electric current. The pig rolled over on its side, and there was abundant salivation. Progressively, after the lapse of two or three minutes, the crisis diminished in intensity, then disappeared, and the animal lay exhausted, until all at once it would get up and with fixed eyes wander about until it met some obstacle against which to rest its snout, forehead, or chest, or it would push against the wall until another crisis appeared. These crises often seized the pig while it was standing, but they always terminated by it falling on its side. Gradually the symptoms increased in intensity, and the crises became more frequent, while the head kept continuously moved up and down as if the creature were affected with St. Vitus's Dance; progression was uncertain and stumbling; the hind-quarters became so feeble that at last it appeared to be a case of Paraplegia. A final crisis, lasting sometimes for several hours, terminated in death.

During the whole time there was inappetence and absence of vomiting;

vision appeared to be impaired—to such an extent, indeed, that the attendant thought the pigs were blind; the pupils were considerably dilated; the skin, hot at the commencement, became cold as death approached, but there was no discolouration; the fæces were scanty and hard.

Such were the symptoms presented by the seven pigs which died. The other seven were saved by the adoption of medical treatment (evacuents chiefly), this result being favoured by the smaller quantity of food they had eaten; the symptoms were not so urgent in them, though they had some crises.

The course of the disease was rapid, the seven victims dying within three days.

With regard to lesions, the skin remained normal in colour; the stomach was half full of food, and its mucous membrane presented patches of ecchymoses of variable dimensions, with inflamed portions involving the substance of the coats. The small intestine, which was empty, was much inflamed for about six feet from the pylorus, its lining membrane being very friable. The colon contained semi-digested food, and was more involved in disease than the stomach and small intestine, the mucous membrane, merely congested in some places, being intensely inflamed over large patches. The other organs did not offer any marked alteration.

The symptoms and lesions led to the suspicion of poisoning, and this was a subject for inquiry. The owner of the pigs received the refuse from the kitchens of an adjoining barracks. In the month of June every year, the soldiers had as part of their rations pickled lard, with which they made soup. This lard was probably usually washed in water, which flowed into the drains; but on July 1st a large quantity of lard was issued and used for soup; this soup, however, was so salt that it was all thrown into the swill-tub, as well as the washings of the lard vessels, so that the swill was really a kind of brine, and this the pigs received on the evening of July 3rd. The question then was, did it really cause the illness among the pigs? Tabourin alludes to Reynal's opinion on the action of brine in the following terms: "According to Reynal, who has made special experiments on this subject, the toxic action of brine (*Saumure*) increases the longer it is kept (the salted lard was made in 1885); in the pig real epileptiform attacks are caused by it." Tabourin himself says: "We know instances of sheep and pigs poisoned by ingesting a certain quantity of brine." Zundel attributes the toxic properties of brine to the presence in it of ptomaines: "These principles are true stupefiants which produce poisoning in animals; these have the neck rigid, the eyes fixed and haggard, general insensibility, tremblings and electric commotions, sometimes epileptiform convulsions. We have noticed a continuous convulsive movement of the jaws, with foaming at the mouth. When the animal stands it staggers and then falls, and at last is unable to rise. There is often paralysis of the hind-quarters."

A colleague informed Lamoureux that in the previous year twelve pigs had shown symptoms of poisoning in the same establishment, from an unknown cause, and eight of them had died, the occurrence coinciding with the distribution of salt lard to the troops.

## THE ARMY MEDICAL STAFF AND ARMY VETERINARY DEPARTMENT.

On July 21st, an influential deputation of representative medical men waited upon the Secretary of State for War, in order to lay before him certain grievances of the Army Medical Staff. The chief complaint was that army doctors do not have substantive rank, and the principal speaker, Sir Andrew Clark, in the course of his remarks, is reported to have spoken as follows: "It has been said, 'What are the objections which might be offered to the conferring of this military substantive title and rank?' It has been said that it would necessitate concessions to veterinary surgeons, chaplains, and other such persons. The answer is conclusive. There is no parallel between such persons and medical officers."

Now we do not wish to discuss at the present moment this burning question of military rank for medical officers. What we desire to do is to point out that Sir Andrew Clark has been altogether misinformed with regard to officers of the Army Veterinary Department, who certainly have a stronger claim to substantive rank and title than their brother officers of the Army Medical Staff. The latter are essentially non-combatants, as they were specially exempted by the Geneva Convention from capture and some other war risks on that account; while veterinary officers were regarded as combatants, no such exemption being granted them. They also accompany their regiments and corps into action, and the part they may play in war has been well exemplified in the recent bestowal of a captain's commission in a cavalry regiment on Veterinary Surgeon Beech for services in the field. Sir Andrew Clark should correct his mistake, which was doubtless due to imperfect information.

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## ROYAL COMMISSION ON TUBERCULOSIS.

A Commission has been issued to Lord Basing, G. J. Brown, C.B., Royal Veterinary College, Dr. George Buchanan, Dr. Joseph F. Payne, and Dr. John Burdon-Sanderson, to inquire and report what is the effect, if any, of food derived from tuberculous animals on human health; and if prejudicial, what are the circumstances and conditions with regard to Tuberculosis in the animal which produce that effect upon man. Dr. Charles L. Hudson is appointed secretary to the Commission.

The above is the order in which the names appear in the *Gazette*, but the *British Medical Journal* of July 26th puts Professor Brown's name last on the list. It would be interesting to learn who nominates the members of these commissions. The former one on Tuberculosis, though composed of a considerable number of medical men (who had never studied the subject), agriculturists, and others, yet had only one member of our profession—Prof. Brown. Now there are four medical men—three of whom have never been heard of in connection with the subject, and the other at one time asserted, we believe, that Tuberculosis could be produced by injecting cheese under the skin—and only one veterinary surgeon again—Prof. Brown. It may be contended that the profession should be fairly represented in the investigation of a question which veterinary surgeons were the first to raise, and have done so much to elucidate; and the public interests demand that an independent veterinary opinion should be expressed at the Commission's deliberations. We have a one-General Army, it is said. Is our profession a one-man affair also? The medical profession certainly is not, in such matters.

# Proceedings of the Royal College of Veterinary Surgeons and Veterinary Medical Societies, etc.

## ROYAL COLLEGE OF VETERINARY SURGEONS.

THE usual Quarterly meeting was held at the College on July 21st, Professor McCall, President, in the chair. Present: General Sir F. Fitzwygram, Bart., Sir Henry Simpson, Dr. Fleming, C.B., Prof. Penberthy, Prof. Pritchard, Messrs. T. D. Barford, T. Briggs, Cartledge, J. Roalfe Cox, T. Greaves, H. Kidd, J. Malcolm, W. F. Mulvey, R. Rutherford, J. Simpson, R. C. Trigger, F. W. Wragg, G. Thatcher (Solicitor), and Mr. A. W. Hill (Secretary).

The SECRETARY read the notice convening the meeting.

On the motion of Mr. WRAGG, seconded by Mr. BARFORD, the minutes of the previous meeting were taken as read.

The SECRETARY announced letters, regretting inability to attend from Prof. Walley, Messrs. Woods, Walters, and Taylor.

### *Presentations.*

The SECRETARY announced the presentation to the library of the "Practical Guide to Meat Inspection," by Prof. Walley; and to the museum, the specimen of the lung of a camel with adult Filaria Evansi *in situ*, by Inspecting-Veterinary Surgeon Evans, A.V.D.

On the motion of Mr. WRAGG, seconded by Prof. PRITCHARD, a vote of thanks was passed to the donors.

### *Correspondence.*

The SECRETARY announced the receipt of a letter from Mr. Mackay, of the Educational Institute of Scotland, in regard to the matriculation examination.

The SECRETARY stated that Mr. John O'Rierdon, holding the Highland and Agricultural Society's certificate, had made application for enrolment as a member of the College. Prof. Walley having verified the certificate, the Secretary was directed to issue the diploma.

The SECRETARY read a letter from the Farriers' Company, in which it was stated that, in accordance with a resolution passed at a meeting held at the Mansion House, they desired to form a Registration Committee, and asked the President to nominate six members of the Council to represent the Royal College of Veterinary Surgeons on that committee. The President had, therefore, nominated, *pro tem.*, the following gentlemen, and an announcement to that effect had been made to the Farriers' Company: Dr. G. Fleming, Sir H. Simpson, Messrs. W. Hunting, F. W. Wragg, and J. R. Cox.

Dr. FLEMING said he had received a notice from the Farriers' Company to attend a meeting, but that was the first intimation of such a committee.

In answer to Mr. J. Simpson, the SECRETARY said that no intimation had been sent to these gentlemen to the effect that they had been elected on the committee.

The PRESIDENT said that as he received a communication from the Secretary asking him to nominate six gentlemen to serve on the committee, he thought he was safe in doing so. If he had nominated any one who was unwilling to act, he was sorry; he understood that the nominations were simply *pro tem.*

Sir HENRY SIMPSON thought it unfortunate that there was no agenda notice that they were going to appoint members to serve on the committee. He also thought it a little unfortunate that they were not consulted. The scheme distinctly said that the members of the committee should be elected by the Council. He did not go to the meeting that had been held, simply because

he felt he had no right to be there; so that up to the present the College had not been legally represented on that committee. He thought it very desirable, if it could be done, that they should that day appoint six members to serve on the Registration Committee. The Council of the Royal Agricultural Society had shown their appreciation of the scheme by nominating some of their best men, and it was desirable that the College should co-operate with them in a legal and proper manner.

The PRESIDENT said he was led to understand that the nominations would be acceptable.

Dr. FLEMING said he did not wish to stultify the action of the President at such an important meeting, and he had attended, but against his own feeling.

Mr. KIDD asked if the election of six gentlemen that day to serve on the committee would be legal.

The PRESIDENT said that he was advised that it was perfectly legal.

Mr. J. SIMPSON proposed that the election be at once proceeded with.

The following gentlemen were then nominated by different members of the Council: Dr. Fleming, Sir H. Simpson, Professor Axe, Messrs. R. Cox, Hunting, Wragg, Barford, Broad, Stephenson, and Cartledge. The following was the result of the poll:—

| | |
|---|---|
| Dr. Fleming | 16 |
| Sir H. Simpson | 14 |
| Professor Axe | 14 |
| Mr. R. Cox | 12 |
| Mr. Wragg | 12 |
| Mr. Barford | 12 |
| Mr. Hunting | 5 |
| Mr. Cartledge | 5 |
| Mr. Broad | 4 |
| Mr. Stephenson | 1 |

The first six gentlemen were declared elected.

Mr. R. COX recommended that a communication should be at once made to the Clerk of the Farriers' Company announcing the result of the election, and also that the first list sent was only a temporary one, and it was necessary to have it confirmed. He thought the correction had better come from the Farriers' Company.

Mr. J. SIMPSON seconded the motion.

Sir F. FITZWYGRAM thought that they ought not to ask the Worshipful Company of Farriers to rectify it.

Dr. FLEMING suggested that the Secretary should write to the Farriers' Company, forwarding the list of members now elected, and adding that this was a definite list sanctioned by the Council.

The motion of Mr. R. Cox was then withdrawn, and Dr. Fleming's suggestion was agreed to.

The SECRETARY announced that a letter had been received from Mr. J. A. W. Dollar addressed to the President, and proceeded to read the same.

Mr. CARTLEDGE thought this was not a matter that ought to come before the Council.

Mr. WRAGG moved that the letter be allowed to lie upon the table, and be not presented to the press.

Mr. BARFORD seconded the motion, which was agreed to.

The Secretary read a letter from the Central Medical Association, calling attention to the obstruction caused to the view of the stained glass windows in the Council room, owing to the casing which had been fixed in front by the liberality of Mr. Greaves, in order to improve the acoustic properties of the room.

Mr. J. F. SIMPSON thought that whilst they had graciously accepted the gift of Mr. Greaves, they must also remember that they had graciously accepted

the beautiful windows presented by the Veterinary Societies. He was distinctly under the impression that when the matter was before the Council it was understood that casing was to be placed outside. He was sure Mr. Greaves would not take it as uncomplimentary if the covering windows were placed outside. Their object would be attained by taking that course quite as well as by keeping them inside. He therefore proposed that the Council should defray the expense of putting them outside.

Mr. KIDD seconded the motion.

Sir HENRY SIMPSON suggested that the matter should be put in the hands of a small committee of five, with power to act.

Mr. GREAVES said that at the meeting of the Council, when the matter was discussed, he had never heard anything said about the windows being put outside. He thought that the business which was transacted in that room was more important than the beauty of the windows. He was pleased to think that in regard to the purpose for which it had been erected, it had answered admirably.

Dr. FLEMING suggested that it would be desirable to make the casements movable.

Mr. J. F. SIMPSON then withdrew his original motion, and moved that the matter be referred to the General Purposes Committee, with power to act.

Mr. KIDD seconded the motion, which was agreed to.

The SECRETARY announced that, in accordance with instructions, he had received estimates for printing the diplomas on parchment.

The estimates were read.

Mr. R. COX moved that it was unnecessary, inexpedient, and not to be entertained for one moment.

Mr. BARFORD seconded the motion, which was agreed to.

Dr. FLEMING added that vellum or parchment was extremely perishable in hot climates, and as a great number of their graduates proceeded to hot climates it was necessary to have a material that would stand the climate. The paper on which they were at present printed lasted very well.

The SECRETARY read a letter from the Royal Counties Veterinary Medical Society, the Southern Counties Veterinary Medical Society, and the Central Veterinary Medical Society, asking that they might have the use of the rooms at the College for meeting at a cheaper rate than at present.

Mr. CARTLEDGE proposed that the charge for the Council-room should be a guinea.

Mr. BARFORD seconded the motion.

Sir F. FITZWYGRAM thought that the charge of one guinea, including servants, would be quite sufficient. He thought the charge for the Committee-room should be reduced to half-a-guinea.

On the motion of Mr. WRAGG, Mr. Cartledge's motion having been withdrawn, it was agreed that the charge for the use of the Council-room should be one guinea inclusive, and that for the Committee-room 10s. 6d. inclusive.

The SECRETARY announced that, in accordance with instructions, he had obtained copies of the bye-laws and regulations from the Royal College of Physicians, the Royal College of Surgeons, and the Pharmaceutical Society, bearing upon the question of professional etiquette.

Mr. R. COX thanked the Secretary for his action in the matter, and moved that the subject should be referred to the Registration Committee.

Sir HENRY SIMPSON seconded the motion, which was agreed to.

The SECRETARY announced that he had brought the subject of a bursary for students before the Finance Committee, who now suggested to the Council that the matter be deferred until a future meeting of Council, at which Professor WALLEY might be present.

On the motion of Mr. CARTLEDGE this was agreed to.

*Report of the Finance Committee.*

The SECRETARY read the report.

Mr. WRAGG moved that the report be received and adopted, that cheques be drawn to pay the liabilities, and that the sum of £500 be invested in Consols.

Mr. CARTLEDGE seconded the motion.

Sir HENRY SIMPSON suggested the alteration of some of the investments, as there were many investments which could be made which would yield a better percentage.

It was then pointed out that, in order to do that, it was necessary that there should be an alteration in the bye-laws, and

Sir HENRY SIMPSON said he would give notice of a motion for such alteration.

*Registration Committee.*

The SECRETARY read the report of the Registration Committee, and also mentioned a case for prosecution.

Mr. WRAGG moved that the solicitor be instructed to prosecute, and that the report be adopted.

Mr. J. F. SIMPSON seconded the motion, which was agreed to.

COURT OF EXAMINERS.

The SECRETARY read the Report containing the lists of students who had passed their examinations.

Mr. J. SIMPSON asked the meaning of the foot-note—"not conformed with the rules of the College."

The SECRETARY explained that that referred to those gentlemen who had qualified, but had not paid their fees and taken up their diplomas.

*Notice of Motion.*

Mr. J. ROALFE COX gave notice of the following motion:—"That the following suggestions be considered by the Council and amended or added to as may be agreed, and in their approved form be presented as a recommendation from the Royal College of Veterinary Surgeons to be adopted and acted on by the Worshipful Company of Farriers. (1.) That each candidate for registration shall be required to furnish testimonials from his employer or employers during the preceding twelve months that he has been sober, and has not caused lameness or injury to a horse or other animal in shoeing during such period. (2.) That the examination of a candidate for registration shall embrace an examination held at a forge on making, fitting, and putting on an appropriate shoe to a selected foot. (3.) That every shoe-smith be required to present a licence granted by the Worshipful Company of Farriers, and the same to be renewed annually, a small fee to be paid for the licence and on its renewal. (4.) A licence so provided to have a printed form to be signed by each employer during the year of its operation, and recording the date of commencing and terminating each period of service, and the reason for leaving, and also stating whether any and what injury has been caused by the licensee in shoeing any horse during the time of each service. (5.) In the event of the proprietor of a forge being made liable, and caused to pay damages for any injury to a horse or other animal, it should be held as evidence that the shoeing-smith who had caused such injury is guilty of culpable carelessness or negligence amounting to cruelty, and the said shoeing-smith shall be liable to prosecution accordingly by the Society for the Prevention of Cruelty to Animals.

*Fellowship Degree.*

The SECRETARY announced that eight gentlemen had duly qualified for the Fellowship Degree.

*Appointment of Examiners for the Fellowship Degree.*

Mr. COX proposed the re-election of Prof. Brown, Prof. Duguid and Dr. Fleming.

Mr. KIDD proposed that Mr. Cox be substituted for Prof. Brown, on the ground that Prof. Brown did not hold the Fellowship Degree.

Mr. J. SIMPSON said that it was not necessary for an examiner to hold the Fellowship Degree.

Mr. KIDD said that although that was so, he still thought that Mr. Cox should be substituted for Prof. Brown.

Mr. MALCOLM seconded the motion.

A ballot was then taken for the election of three gentlemen to serve as Examiners, when the following were nominated: Dr. Fleming, Prof. Duguid, Mr. R. Cox, and Prof. Brown.

The result of the poll was as follows:

| | |
|---|---|
| Dr. Fleming .. .. .. .. .. .. .. | 10 |
| Prof. Duguid .. .. .. .. .. .. .. | 10 |
| Mr. Cox .. .. .. .. .. .. .. | 8 |
| Prof. Brown .. .. .. .. .. .. .. | 3 |

The first three gentlemen were declared elected.

*Course of Procedure.*

Sir H. SIMPSON suggested that an alteration should be made in the time of holding the various committee meetings. The thought that the Quarterly meetings might extend over two days, the committee meetings to be held on the first day, and the council meeting to take place at noon on the following day. Each committee, too, he thought should nominate a reporter, who should draw up a report and read it to the council meeting.

Mr. KIDD suggested that the committees should be confined to seven members.

The PRESIDENT thought the course suggested would entail great expense on the country members.

Sir H. SIMPSON thought that the members would probably not mind the extra expense.

Dr. FLEMING said that the committee meetings pressed very heavily on the members living near London. It would be an advantage if they could elect more of the country members; the labour should be divided as much as possible.

Sir H. SIMPSON said he should propose to appoint a chairman and deputy-chairman for each committee, he thought that would lighten the labour of the President very much. He proposed that the committee meetings be held on the day previous to the council meeting.

Mr. TRIGGER thought it would be better to have the meetings on the morning of the council meeting, as that would not entail so great a loss of time on the country members.

Mr. CARTLEDGE said that if members would not speak so frequently and so long they would be able to get away at a reasonable time.

Dr. FLEMING seconded Sir Henry Simpson's motion.

Mr. TRIGGER moved as an amendment that the committee meetings should be held on the morning of the council meeting.

Mr. KIDD seconded the amendment.

On a show of hands the voting was declared to be equal, and the President gave his casting vote in favour of the motion, which was declared to be carried.

*Appointment of Committees—Parliamentary Committee.*

The following gentlemen were appointed to serve on this Committee:—Sir H. Simpson, Prof. Duguid, Gen. Sir F. Fitzwygram, Dr. Fleming;

Messrs. Barford, Cartledge, Rutherford, Greaves, Lambert, Simcox, Taylor, James Simpson, Whittle, Profs. Axe, Penberthy, Pritchard, Brown, and Mr. Taylor.

*General Purposes Committee.*

The following gentlemen were elected on this Committee:—Sir F. Fitzwygram, Dr. Fleming, Sir H. Simpson, Messrs. Barford, Briggs, R. Cox, Greaves, Hunting, Mulvey, J. Simpson, Taylor, Whittle, Woods, Wragg, Trigger, Malcolm, Walters, and Professors Penberthy, Duguid, Axe, and Pritchard.

*Registration Committee.*

The following gentlemen were elected to serve on this Committee:—Sir H. Simpson, Dr. Fleming, Messrs. Briggs, Cox, Greaves, Lambert, Mulvey, J. Simpson, Taylor, Whittle, Wragg, Malcolm, Trigger, Kidd, and Walters, Professors Axe, Penberthy, and Pritchard.

*Bye-Laws Committee.*

The following gentlemen were elected to serve on this Committee:—Mr. Barford, Mr. Cartledge, Mr. R. Cox, Professor Duguid, Sir F. Fitzwygram, Dr. Fleming, Sir H. Simpson, Messrs. Greaves, Cox, Hunting, Kidd, Mulvey, J. Simpson, Whittle, Wragg, Rutherford, Lambert, Walters, Professors Axe, Pritchard, Walley, Williams.

*Finance Committee.*

The following gentlemen were elected to serve on this Committee:—Messrs. Barford, Briggs, Cartledge, Cox, Dr. Fleming, Sir H. Simpson, Messrs. Greaves, Briggs, Mulvey, Wragg, Simcox, J. Simpson, Taylor, Professors Williams and Pritchard.

*Dinner Committee.*

The following gentlemen were elected to serve on this Committee:—Professor Pritchard, Messrs. Briggs, Hunting, Lambert, Mulvey, J. Simpson, Wragg, and Cartledge.

*Foreign and Colonial Schools Committee.*

Mr. J. SIMPSON moved the reappointment of this Committee, which was agreed to.

Sir H. SIMPSON moved that a vice-chairman should be appointed to each committee, who should draw up a report and read it at the Council meeting.

Mr. BARFORD seconded the motion, which was agreed to.

It was agreed that the list of Committees should be printed and circulated.

The SECRETARY read the obituary list.

Dr. FLEMING mentioned the death of Mr. Dundon, of the Army Veterinary Department.

The SECRETARY brought to the notice of the Council a motion passed at the Annual Meeting with reference to the necessity for obtaining a new charter, and which had been referred to the Council for consideration.

Mr. MULVEY said that that matter was under the consideration of the Council.

*Notices of Motion.*

A notice of motion was given by Professor Axe for the adoption of revised regulations for the examination of veterinary students in general education; also that Regulation 17 of the regulations for professional examinations be altered by striking out the words "twelve months" in the sixth line thereof, and substituting the words "three years" in place of the words so struck out.

Sir H. Simpson gave notice of the following motion:—

"That Bye-law 48 be altered by adding to the investments authorised for the funds of the College, mortgages on rent securities in England or Wales,

or on heritable property in Scotland, or on bonds, mortgages, or debentures of incorporations or incorporated companies paying dividends on their ordinary stock, in accordance with Section 17 of the Charter of 1876, and the Trusts Investment Act."

A hearty vote of thanks was passed to the Chairman.

The Council then adjourned.

## CENTRAL VETERINARY MEDICAL SOCIETY.

THE usual monthly meeting of the above Society was held at the First Avenue Hotel, on June 5th. Mr. William Hunting in the chair.

The SECRETARY said he had received letters from Messrs. Wright and Harry Withers, expressing their regret at not being able to attend. He had also received a post-card from Professor Walley, on the subject of printing his essay, "'Tis only a Pin."

The following gentlemen were balloted for and elected Fellows of the Society:—Mr. Charles J. Humphrey, 58, East Hill, Wandsworth; and Mr. J. A. Gosling, of 180, Blackfriars Road, S.E.

The PRESIDENT read his paper, as follows, the title being

"A NEW CHARTER—IS IT NEEDED?"

GENTLEMEN,—Although subjects of scientific interest are preferred for our meetings I cannot doubt but that questions affecting the welfare of the profession are also acceptable. No question of greater interest to us all is now to the front than that of the expediency of applying to the Privy Council for a New Charter; whether we be in favour of it or adverse to it thorough discussion can only tend to enlightenment.

In 1844 our calling was made a profession, and our members were made a corporate body by a Royal Charter. The privileges then granted us were accompanied by rules and limitations which regulate our corporate action and strictly bind us to a definite method of procedure. As the profession grew in numbers and importance it was found necessary to modify and alter in various ways some of the provisions of the Charter. In 1876 we obtained a Supplementary Charter. In 1879 we again obtained another Charter, and in 1883 a fourth Charter was found necessary to enable us to carry on to the greatest advantage the governance and regulation of the profession.

New Charters then are no novelty; we have three precedents before us, and it only remains to show that another Charter would be advantageous to demonstrate the necessity and expediency of applying for it. Unless it can be clearly shown that a necessity exists for a new Charter it would be folly to take any steps towards obtaining it, and unless a decided majority of the profession are convinced of that necessity I should admit that it is not expedient.

The argument that it would be expensive will not stand a moment's consideration. We have sufficient funds to pay all the cost without dangerously depleting our treasury, and the only calls upon them are for necessary expenses. If a new Charter be necessary to our welfare as a profession, if it will promote our interests, if it will add to our unity and strength, the pecuniary outlay can only be called a useful and necessary expenditure.

*Reasons why a New Charter is required.*

I. To amalgamate the existing four into one, and so render the constitution of our profession intelligible to any one of ordinary mental powers. Even if no other reason could be adduced, this alone would justify us in asking for a New Charter. At present there are probably not three men on our Council who can tell, without reference, how each Charter has modified the others. So complex are our rules that a legal adviser is necessary to help and guide the Council at every proposal. This complexity disgusts practical minds, and

results in men not taking the interest they should in the arrangements of our profession. Simplicity and lucidity might be attained in a New Charter.

II. To alter the Charters so as to permit improvements in the government of the profession and thus enable us to more easily advance with the times.

A systematic study of the Charters would doubtless enable us to improve many of the clauses which now affect the constitution of the profession. It would be very rash to attempt any modification without the most serious and careful consideration. This work we desire the Council to undertake, but until the profession makes its desire clear and intelligible we cannot, perhaps, blame the Council for treating the matter as not very pressing. Not long since Mr. Kidd moved a resolution that the Council should consider the subject. His resolution was rejected mainly on two objections—that the expense would be great, and that the matter was not urgent.

There are at least three alterations which I think a majority of the profession now consider desirable, and which are quite sufficient to warrant an official enquiry.

1. An alteration of the original Charter which will enable the profession to directly elect every member of the Council.

2. An alteration of the Ninth Clause of the 1876 Charter, which will leave the Fellowship "a higher degree" but restore to the members their rights and privileges.

3. The insertion of a clause which will prevent men acting both as Councilmen and Examiners.

*Vice-Presidents.*

The original Charter of 1844 ordains that the concerns of the Body Corporate shall always be managed by a Council; and that the Council shall consist of not more than 31 nor less than 24 members, of whom one shall be President and six Vice-Presidents. It further declares that the Council shall be elected at the annual General Meeting by the members, but that the President and Vice-Presidents shall be elected by the Council, at a meeting to be held before the expiration of one month after the annual meeting. It provides also that the President and Vice-Presidents shall remain in office till the annual meeting at the end of their year of office breaks up or adjourns.

This last provision was altered by a clause in the Charter of 1883. Under the old regulation we were without President and Vice-Presidents during the time which elapsed between the annual meeting and the meeting of Council at which fresh elections were made. To remedy this inconvenience the 1883 Charter provides that "the President, Vice-Presidents, Treasurer and Secretary shall continue in office till the meeting of Council at which their successors are appointed, and on the appointment of their respective successors they shall respectively retire from office." By this alteration a possible inconvenience was guarded against, but a greater evil was introduced, viz.:—the power of each Vice-President attending at the meeting and voting for his own re-election. The votes of six men in a large electoral body are of no importance, but the votes and interest of six men in a small body of less than thirty is a power which should not be allowed on a so-called representative body, especially when it is remembered that these votes may be cast for themselves. This can only be altered by a new Charter.

But even under the old rule the arrangements for election of Vice-Presidents were objectionable in two respects, and these are still in force. Of the thirty members of Council there retire annually six Councilmen and six Vice-Presidents. The profession elect the Councilmen, but the Council elect the Vice-Presidents, so that it is always possible for the Council to nullify the effect of the voting of the profession. There is no reason what-

ever why the Council should have the power of selecting men as Vice-Presidents who have not been elected to the Council by the votes of the profession. A Vice-Presidency is an honourable position—next in fact to the Presidency. Men should be chosen for it on account of their special fitness for the duties of the post—not merely because it enables them to act as a member of Council for a year without the ordeal of election by the profession. Perhaps the greatest objection to the existing system was indicated by Sir Henry Simpson at the last Council meeting, when he proposed the election as Vice-President of Professor Axe, who had just terminated his year of office as President. Sir Henry explained that he did so because on any occasion on which, in the absence of the President, his duties were carried out by a Vice-President, it was most important that the deputy should be a man possessing experience of Council matters, and conversant with the duties of the chair. No one is so fit for this as a past-president, whereas the present system absolutely limits the vice-presidentship to untried and inexperienced men. Instead of our oldest men being selected as Vice-Presidents it is our youngest, instead of the office being looked upon as the highest but one, it is used as a nursery for coming Councilmen. Sir Henry Simpson has indicated a very grave evil, but one which cannot be satisfactorily solved till a New Charter has altered the method of election.

The alteration is a simple one—the profession must elect the whole thirty members of Council, and then the Council can select the best and most suitable men as Vice-Presidents. In this way our Council would be directly representative of the profession. The vice-presidency would be a more honourable position, and men who possessed the necessary experience would be elected to it.

That our governing body should be as truly representative as possible; that our Vice-Presidents should be selected for their suitability; that everyone of our Councilmen should be subject to the approval of the members of the profession, seem to me such elementary propositions that the simple statement should ensure their acceptance. I think I have shown that not one of these necessary conditions now exists and that we can only obtain them by a new Charter.

*The Ninth Clause.*

In the Supplementary Charter of 1876 there is a clause which provides that no member of the profession, except those who at that time were members of Council, should, at the expiration of ten years, be permitted to act as a member of Council or as an Examiner unless he had passed an examination and paid fifteen guineas for the Fellowship degree. The Charter of 1876 was obtained chiefly to establish the Fellowship degree, and the reason stated for the step is "to more effectually promote and encourage the study of veterinary medicine and surgery." Apparently the authors of the Charter had little faith in mere "promotion and encouragement," they therefore determined that any member who did not take the new degree should be *punished* by being debarred from holding any of the honorary and honourable positions the profession had to offer. It must be confessed that at that time veterinary science was not much valued, that its practitioners nearly all sneered at "Science," and generally treated it as something quite opposed to "Practice." Some excuse, then, may be made for the Council, who fancied "the higher degree" would become a dead letter unless some strong inducement were provided to *make* men take it—and the Ninth Clause was invented. The Clause has conspicuously failed to do what it was intended. It has *not* forced men to take the degree; but has raised ill-feeling, and made the large majority of the profession who are members only look upon the small minority who call themselves Fellows with anything but sentiments of respect. The special privileges which are reserved for Fellows

have not only injured the recognition of the degree as a scientific advance; but they have positively caused a feeling of opposition, which increases every year and gives promise of being a strong factor of disruption. No one has said a word against the Fellowship as a mark of honour, and no one would hesitate to accept it as evidence of scientific eminence—provided the obnoxious privileges were separated from it. Even if it be granted that all the Fellows possess scientific attainments above the level of the members, there is no argument for depriving a member of direct participation in the government and guidance of the profession. Scientific attainments are by no means the only requisite for a Councilman, but the Fellowship examination makes no attempt to test any other qualifications. Everyone knows that there are scores of members possessed of common sense, business tact, knowledge of the world, experience of men, education, manners, money and social position, in quite an equal degree to the best representatives of the Fellowship. Everyone knows that such men would make good Councilmen, but their powers are now lost to the profession because they do not care to present themselves for examination. Is there any moral right to force a man to pass a scientific examination if he does not wish to? Is there any moral right to deprive a man of the exercise of certain privileges—amongst others of a voice in regulating the profession to which he belongs—simply because he may not possess the theoretical knowledge of a recent student? Is there any test applied to the Fellows to show they possess special fitness to act as Councilmen—any test which can compare with the natural and constitutional one of selection by his fellows?

To all these questions there can be only one answer—No!

The fact is the Council in 1876 made a mistake: they imagined the Fellowship degree by itself and on its merits would not be sufficiently attractive, so they added a coercive clause. This clause has injured and obstructed the degree, at the same time that itihas deprived men of privileges they had a right to. It will always be a stumbling block. Members will always be numerically greater than Fellows, and will feel hurt that a few should rule them and take positions from which they are barred. The members will become more and more indifferent as they recognise that they have no part in the regulation and progress of their calling, and professional apathy will increase.

Let the profession recognise that the Council of 1876 did their best, and legislated honestly. They were wrong, and there is no credit in refusing to acknowledge the error. They copied a notion from the College of Surgeons which even then was cause of disagreement in the sister profession and now is a source of constant quarrelling. Their mistake is not irreparable and the Charter is not unalterable.

It has been said that in 1876 the whole profession knew what the Council were doing and silently approved. Some more venturesome men have said that each individual member was consulted by circular. Now I do not wish to assert that these statements are false, but I ask for proof. We all know that the Council of that day was not elected by voting papers, and that it did not represent the profession. A little clique of well-meaning and very respectable men then did what seemed good in their own eyes, and the profession seldom took the trouble to ask what they *had* done—never what they were *going to do*. The profession was apathetic, it did not *object*—but it did not *approve*, and surely now when the clause is found to be objectionable, it has a right to ask for its repeal. I have taken the trouble to look back in our literature and I have carefully searched for any record of work done or words spoken concerning this Charter of 1876.

The first mention I find of it is in a report of a Council Meeting on October 5th, 1875, when the President brought forward notice of motion

for a Supplemental Charter with "power to grant a higher degree" at the next meeting of Council on December 3rd, 1875 (the report of the proceedings of which are published in the VETERINARY JOURNAL), the clauses of the Charter were, we are told, "considered seriatim." The clauses are published, but not one word of "consideration" is reported. At this meeting I find the only hint of any publicity being given to the Charter; it runs thus, "On the motion of the President it was resolved that the draft Charter be printed and circulated amongst the members of Council and the Principals of the Schools." As far as I can find out this was the only publicity given, except what might have been obtained through the two monthly journals—one of which it must be remembered was then only in its infancy, and perhaps not very widely read.

On January 5th, at a meeting of Council the draft Charter was considered clause by clause. When Clause IX. was arrived at, it will hardly be believed that only two remarks were made, and neither bore any reference to what is now complained of. "Mr. Greaves said he thought the time had arrived when the Board of Examiners should consist of Veterinary Surgeons only" . . . "The President having expressed his opinion that the Council had the option to appoint examiners either in or out of the profession the clause was allowed to remain as it stood." Not one word of explanation was offered, nor was any objection raised. It seems as though the authors of it preserved a discreet silence, and the profession never noticed its drift.

The next notice of the Charter I find is in a report of a meeting of the Yorkshire V.M.S., on January 28th, 1876. The report says "the Supplemental Charter was discussed," and from this we gain a tolerably clear idea of what was understood throughout the profession by the Charter. The President said "Clause 14 was the gist of the whole matter, and he did not think the Charter much use without it." Now Clause 14 was a protective clause which attempted to obtain by Charter what we have since got by Act of Parliament. In those days it seems to have been thought that a Charter could prevent men practising as Veterinary Surgeons who had no diploma, and therefore no right to the title. Upon this clause attention was solely fixed, and every Association (there were not many) that noticed the Charter limited its discussion to this one point. One man only seems to have detected the value of Clause IX., and that was George Morgan, of Liverpool, then President of the Liverpool V.M.A. Referring to it at a meeting on February 11th, 1876, he says, "In the discussions in Council this clause seems to have been adopted without a murmur"; and he adds, "This appears to be about the most selfish clause that could have been inserted in this or any other Charter; and he who drafted such a clause must have been devoid of conscience." At this meeting a resolution was passed *nem. con.* "that the Council be requested to withdraw the Charter." This resolution was forwarded to the Council and read at a meeting of that body on May 14th. It was hardly noticed. Mr. Greaves and the President alone spoke, and both referred only to Clause 14 (the protective clause, which had been dropped). The interest of that Council meeting was fixed on other things, and the next paragraph tells us with a naiveté which is now amusing, that "Mr. Dray and Mr. Moon were appointed the Dinner Committee."

The fact is, "Nobody knew and nobody cared." Clause IX. was never appreciated until years after the Charter had been signed, and only then by men who felt the shoe pinch, and who found that they would never get a seat on the Council unless they took the Fellowship. Some commotion was made, the objectors became prominent and popular men; most of them were returned as Councilmen, some became Examiners, and all quietly took the Fellowship and ceased agitation. I have looked in vain for any letters on

the IXth Clause in our veterinary periodicals for 1876, and have not seen one reference to it in any editorial article. Clause 14 (the lost clause) attracted all the notice and Clause IX. escaped attention. The Fellowship is not raised by being made a stepping-stone to a seat on the Council. It ought to be "a higher degree," it ought to represent a higher standard of scientific attainments, and it can only do this when its possession is esteemed a sufficient honour without the tacked-on privilege of a sole right to legislate for the profession.

Now-a-days vastly more interest is taken by members in our calling—most men have some idea on veterinary education and examination, most of us take some interest in the scientific advance and social progress of the body to which we belong; all of us have a natural right to share in the duties of a self-governed corporation. It might have been right and wise in 1876 to use this IXth Clause as a stimulus, but I doubt it. It is certainly wrong in 1890 to retain it, when it has been demonstrated to be useless for good, but powerful in causing disagreement and dis-union.

Against the Fellowship as a Degree no one has said a word. It is decidedly a good thing that men who have entered our profession should be encouraged to keep fresh in their minds the facts and principles taught them at College. By so doing they are able to easily keep abreast of the slow but constant progress of science, and they are better able to understand the phenomena of disease presented to them in practice. The fact that every new member knows he may in five years obtain a higher degree is certainly a stimulus to him to retain some direct association with his books and with the scientific work of other men. Whatever habits are formed during these first five years in the profession will probably distinguish the man for life, and thus, in time we shall have a large body of practitioners who take an interest in their calling for its own sake, as well as for what they can get out of it. Every year the public is giving more and more recognition to the Fellowship, and we should endeavour to keep it free from meretricious attractions—especially such as are unjust to other men and likely to stir up ill-feeling and antagonism. When we separate the Fellowship Degree from all connection with the purely business arrangements of the profession wo shall find it more highly valued and more largely sought for. We cannot de this till Clause IX. is abolished; and we cannot abolish it till we have a New Charter.

I think there may be some argument for requiring an Examiner to be a Fellow; but this might be left to the Council. I hold that the representative body of the profession should have as free a hand as possible, and that the check on them should not be a legal Charter so much as a watchful supervision of their actions by the profession. It is possible we might some day find a good Examiner who was not a Fellow and I see no reason why we should disqualify him. The Council might be trusted to select with care.

### *The Dual Appointment.*

Our original Charter provides that the Council shall be the Executive and Legislative body of the profession. Its powers cease outside of the corporate circle, but, like every other body, it has external relations, and these may cause the acts of the Council to have a wide effect on persons and institutions not under their governance. As one notable instance I may name the veterinary schools and their students. Very intimate and very delicate are the relations between these and our Council. The point of contact is the examinations which the Royal College enforce upon the students before admitting them as graduates. These examinations are conducted by a body of gentlemen appointed by the Council, which has full powers to select any one it chooses—with one exception. This exception is thus stated, "We

do hereby expressly declare and enjoin that no professor of any college shall in any way or manner act or interfere as examiner, etc." Now why this exception? No doubt to guard against the possibility of, and personal feeling being entertained, either for or against a student by an Examiner. An Examiner should be an independent man, free from bias, and above suspicion. Had he any direct interest in the passing or rejection of a student he might rise superior to it, but the framers of our Charter declined to permit even a possibility of unfairness. They recognised that human nature is not infallible, and they expressly declared that no professor of a veterinary school should be permitted to examine. We all recognise the wisdom of this provision, and we do so without the slightest idea that it reflects upon the character of the teachers. We credit them all with being honest and high-minded men, we know that they would, from their knowledge and training, all make very good Examiners—many of them even superior to the gentlemen to whom we are now limited. More than once our Council has seized the opportunity of the retirement of a teacher from his school to make him an Examiner, and never has their confidence been misplaced. No one has ever exclaimed, "It is playing the game very low to suggest that because a man is a professor he cannot act fairly as an examiner, or *vice versa*." This expression very slightly altered has been used with a different application. It loses sight of the fact that "a man cannot serve two masters," and that judicial appointments in this country are carefully guarded, even against suspicion. An Examiner should have no special interests in any other body which is affected by his decisions, or which may affect his position. An examiner must have no special interests in the teaching schools—this is recognised by Charter. An Examiner must have no special interests in the Council which appoints him and which has to judge his actions—this is not recognised by Charter, *but it is our duty to have it so.* It may be argued that, unlike the interests of professor and Examiner, the interests of Councilman and Examiner are quite distinct and separate. Well, let us consider the point and let us remember that the Charter as at present existing gives an answer to the question, "Why on earth should the Council be restricted in its choice of men to act as examiners?" We are now debarred from obtaining the highest talent procurable because the Charter expressly forbids our using the experts on anatomy, surgery, etc., to be found only in our schools. It does so on sound common sense principles, which are intelligible to most men; without implying either an imputation on their character or a loss to the profession. It has been said that "it is playing the game very low to suggest that because a man is Councilman, he may not act fairly as Examiner or *vice versa*." Now, I have attempted to show that a similar remark may be, with equal justice, applied to "Professor and Examiner," but that it is illogical and untrue. All we have to do in either case to show the inconsistency of the dual appointment, is to show that interests exist which are likely to be detrimental. I have said that the office of Examiner is essentially a judicial one, whereas the duties of the Council are essentially legislative. There is nothing in common between the two which necessitates the same personal characteristics and acquirements. Out of a profession numbering 3,000 members it is surely possible to find men capable of filling these positions singly.

A recent enquirer, after discussing the merits of the different men, arrives at the conclusion that only two men holding the dual appointment can be said to be difficult to replace. I unhesitatingly assert that any one of them might be replaced in either position by men equally as good; and therefore I am convinced that a change that would forbid Examiners being members of Council would, at any rate, do no harm to the greatest interest concerned—the interest of the veterinary profession. We are not so poor in talent that

the removal of nine men from our Council would permanently injure us, or even that the removal of nine men from our Board of Examiners need cause more than a momentary difficulty in replacing them by men of equal talents and acquirements. The only questions really arguable are—Have Examiners, any interests which may be furthered by their being Councilmen; and has the Body Corporate any interests which may be injured by this dual appointment? Upon the decision of these depends the expediency of continuing or altering the existing arrangement. The Council is the governing body of the profession, in whose hands all appointments lie. They appoint the Examiners, and as this is an office of honour and profit, I hold that it is wrong in principle that a candidate for such office should be in a position to assist directly in his appointment to it. That this self-appointment is wrong, is evident; but it has not been publicly recognised that the evil is growing. Not long since only a few men held dual appointments, now nearly one-third of our Council consists of men holding a paid appointment, and we may look forward to the time when a slight extension of the usage shall give a numerical majority on the Council to our Examiners, who may then pass resolutions for their own election and emoluments.

A greater evil than this exists. The Examiners are the portion of the body corporate in most direct contact with the Schools; they are the authorities to whom is entrusted the care of admitting or rejecting candidates for the diploma, and they are therefore most likely to be misunderstood by, or to misunderstand the two great entities outside, but most nearly related to us —the teaching bodies and the students. In case of any disagreement the Council is responsible, and must adjudicate upon the conduct of the examiners. Does any sane man assert that a Council, one-third of which are Examiners, can impartially decide? In what other branch of life do we find a judicial body enquiring into the acts of its paid subordinates with one-third of its number made up of those subordinates? It is not difficult to see that when the Council have to consider the actions of the Examiners, they will be able to do it more impartially if no Examiners are permitted to sit in judgment upon themselves.

It is wrong that a man should be able to use his vote and interest in favour of gaining a paid appointment; but it is far worse that a man should sit on a judicial body when his own acts are under discussion. Such a position is quite incompatible with impartial justice, even if it does not overstep the bounds of common decency. The fact that conflict between the two bodies has not arisen has alone prevented members from recognising this anomalous position. Once indeed it seemed that a conflict was imminent, and we outsiders (we members of the profession) do not even now know that the conflict was not hushed up by the convenient action of the dual appointment. I think this short statement effectually answers my first question—Have Examiners any interests which may be furthered by their being Councilmen? and the answer carries with it an insuperable objection to the dual appointment.

If it be true that Councilmen elect themselves as Examiners, or that Examiners are able to vote for their own election, it is certainly injurious to the interests of the profession. If a large portion of our Council consists of Examiners, it is clear that the Council cannot properly consider the action of the examining board, and may be induced to decide questions of grave importance without that impartiality which is necessary to make a judicial decision respected. For these reasons I arrive at the conclusion that the profession is directly injured by the action of the dual appointment, and I conclude that a Councilman is no more desirable than a professor in the office of Examiner. We want our Council to be above suspicion as much as we do our Board of Examiners, and we recognise that the provision made by our Charter against

professors is quite as urgently needed against Councilmen. I make no accusations against our Council, and I am convinced of the honesty of our professional staff, but just as the Charter objects to professors as Examiners, so I object to Councilmen. Human nature is weak, it is liable to unconscious bias, and every precaution must be taken to prevent injustice and to protect men against themselves. Assertions and arguments as to the merits of individuals must not be allowed to blind us to principles, nor to weakness in our constitution, which are more than "possible" dangers, and we must, if needs be, sacrifice a man or two to the good of the profession. What we want is a Council that will do justice, and an Examining Board of capable men. We can have both without any dual appointments, and we can only expect impartiality when the two offices are separated. To effect this separation we must have a New Charter.

There may be more reasons, gentlemen, for a New Charter than I have given, but I submit that the three great alterations suggested are in themselves sufficient warrant for our insistance. I quite appreciate the difficulties and dangers of altering the Charters upon which the profession is constituted, but I find we have already, without very serious harm, obtained three Charters since our original instrument of incorporation. I ask you to say that another is wanted, and that our Council should be called upon to carefully consider what alterations are desirable, and how best the applications should be made.

As the Council is a representative body, it is for the profession to indicate the direction in which alteration is desired, and I submit to this Society—and I hope also to other associations of my fellow practitioners—that the three subjects I have discussed are prominent amongst the alterations required, and should find recognition in the much wanted New Charter.

Mr. BURRELL thought they should congratulate themselves that they had such a powerful advocate as their President. He would not deny that injustice had been done to some members of the profession by Clause IX., but he did not think they should make that the basis of their action. If that was all they had to say about it, they had better drop the agitation altogether. They ought to show that the repeal of the clause would *be good for the profession at large.* Some few years ago, when speaking on the subject at an annual meeting, he expressed the opinion that this clause would prevent them having a fully representative Council, and that observation had been borne out by what they had seen. He thought they should look at it in the light that the corporate body was deprived of the services of good men, and not regard it so much in the light of a personal injury.

Mr. HURNDALL congratulated the chairman upon the able manner in which he had introduced the subject. So fully had he dealt with it, that so far as he could see, it left little room for anybody else. At the meeting of the National Veterinary Association held in Birmingham some time ago he advocated the alteration of this Clause IX. He remembered Mr. Kidd doing the same, but since then that gentleman had presented himself for examination. It seemed to him (the speaker) that the Council appeared to have taken no notice of the wishes of the profession. A representative body should do so even if it was not really in consonance with their own views. If they could not consistently advocate principles that they were sent to represent, then they should resign their places on the Council. Some of the Council when they were elected promised to do something towards having the wishes of the profession carried out; but nothing had been done, and that he looked upon as a direct insult to the profession. He had little hope of the Council giving them any assistance in this matter until a sufficient amount of new blood was introduced, which meant the expiration of a number of years. As an outcome of the discussion he hoped some resolutions would be unanimously

passed and sent to the Council. He did not quite follow Mr. Burrell as to making Clause IX. a personal matter. For himself he had never made it a personal matter, and had always looked upon it as a matter that affected the whole body corporate. A clause had been inserted in the Charter which deprived eight-tenths of the profession of rights which they enjoyed up to a certain period. There was a decided majority against the change at the Birmingham meeting which he had referred to, and that being so the question deserved some consideration at the hands of those who were on the Council at the time. The only argument on the other side appeared to be this: that the gentlemen who had paid fifteen guineas were not disposed to be deprived of rights that they had paid for. He could give the names of several who had said this, but comparisons were odious. The Fellowship Degree should not be one merely of gain, but should also indicate scientific attainment. He was obliged to the chairman for having brought forward information with regard to the publicity given to the Charter and to this clause. At the Birmingham meeting he expressed the opinion that he did not believe sufficient steps had been taken to learn the will of the profession in the matter. A circular should have been sent to every member of the profession as to what was proposed to be done. He would not say that it was not done with the best intentions, but certainly a mistake had been made. It had been said that an injustice had only been done to those members of the profession who passed prior to 1876, but subsequent members were entitled to the same right in virtue of the earlier Charter. As to the "dual appointment," there was the objection that they could not expect to have the work of the Examiners properly reviewed so long as they governed a part of the Council. It would certainly have been desirable to have had fuller information with regard to the Edinburgh disturbances. He felt sorry for the gentleman who was then given the cold shoulder, and believed an injustice was done to him. The point respecting the Vice-Presidents was an important one, and had been very clearly put by Mr. Hunting. The Council at present could elect men who might be anything but reformers. It would certainly be far better if the Council was increased to thirty, sat for three years instead of four, and if ten retired each year. He hoped that something would arise out of this meeting to show that there was a desire on the part of the profession that some active steps should be taken to obtain a new Charter, so that these matters might be revised and altered to meet the wishes of the majority of the profession.

Mr. MULVEY said he had so often spoken on this subject that it was unnecessary for him to say much that night. He cordially endorsed all that Mr. Hunting had said, and begged to move "That the Central Veterinary Medical Society with the view of obtaining information respecting the desirability of obtaining a new Charter, request the secretary to place himself in communication with all the veterinary medical societies in order that the question may be fully discussed and all their views obtained."

Mr. HURNDALL seconded the motion.

Mr. RAYMOND said he should like to move an amendment that the debate should be adjourned for a month, as they then would be able to draw their conclusions better from what had been said.

Mr. BURRELL thought the two propositions could be carried out. The original resolution having been carried, it was understood that the question would be further considered.

Mr. ROWE then said he should like to trespass on their patience for a minute or two. Mr. Greaves, as they knew, had presented to the council room at Red Lion Square double windows to improve the acoustic properties of the room, and to deaden the sounds of traffic outside. This had completely spoiled the effect of a stained-glass window put in by this

society. He had complained at the annual meeting, but was told that he should "not look a gift horse in the mouth." The woodwork was much too heavy, and he was intensely upset, and would not rest until it was removed. He moved "that the C.V.M.S., who contributed one of the windows of stained glass in the R.C.V.S., whilst acknowledging the generosity of Mr. Greaves, viewed with regret the introduction of a framework in front of it, and respectfully requested its removal, as the artistic effect was totally marred by its presence."

Mr. RAYMOND seconded the resolution, which was carried unanimously.

The meeting was then adjourned to the first Thursday in July.

SIDNEY VILLAR, *Hon. Sec.*

## SCOTTISH METROPOLITAN VETERINARY MEDICAL SOCIETY.

A meeting of the above society was held in the London Hotel, Edinburgh, on June 25th, the President, H. Thompson, Esq., Aspatria, in the chair.

In addition to the President, there were also present, Messrs. Hutton, Cunningham, Black, Durkie, Phillips, Boyd, Borthwick, W. O. Williams, Love, and the Secretary.

After the reading of the minutes, the CHAIRMAN expressed his disappointment at the small number of members present, and said he trusted that this was not to be attributed to any personal feeling against himself, or any widespread feeling amongst the members of the Society that they had done wrong in October last in promoting him to the very high and honourable position which they had done.

Mr. RUTHERFORD said the attendances at these meetings were sometimes small, do as they may; but the meagre appearance that day was certainly not due in any respect whatever to a want of confidence in their worthy president, Mr. Thompson. On the contrary, the feeling of one and all of the members was one approaching brotherly affection for the president, whom they all respected and esteemed, and were delighted to honour. The explanation of the small attendance rather lay in this, that many members appeared to find it difficult to get away from their business to attend so many meetings as they had in a year. It was a question whether it would not be worth their while having fewer meetings, when they might resonably expect better attendances than usually was the case.

Mr. CUNNINGHAM, Slateford, also assured Mr. Thompson that it was out of no disrespect to him that the numbers present were so limited that day. It was one of those incidents which would happen, and for which there was no accounting. Afterwards the business of the meeting was proceeded with.

### *Rabies in Dogs.*

Four resolutions on Rabies, passed by the Central Veterinary Medical Society, London, were submitted for the opinion of the Scottish Society. These resolutions were—(1) "That this meeting, whilst recognising the possibility of animals other than the dog becoming the media of spreading Rabies, is of opinion that in a large majority of cases, if not the whole, the development of this malady is due to the dog;" (2) "That from abundant evidence gathered in our profession this meeting finds that effective muzzling is the most reliable method of stamping out the disease;" (3) "It is advisable that all imported dogs be subjected to a quarantine of six months;" and (4) "That partial or local muzzling of dogs for the prevention or eradication of Rabies is inadequate." One or two members expressed the opinion that in Scotland, where the disease has never assumed alarming proportions, wholesale muzzling was not required, and would not in all probability be tolerated by the public. One speaker said that if wholesale muzzling was to be adopted,

sporting and all sorts of dogs would have to be included; while another doubted if they would even be justified in giving the fox a free hand in the matter. It was also pointed out that magistrates in towns should have power to seize and destroy at all times of the year stray and ill-cared-for dogs, whose presence might be a source of danger to their neighbours.

Finally it was resolved, in view of the small attendance, to hold over the discussion of the subject until the meeting which is to be held in October.

### *The Question of Feeding Stuffs.*

A discussion on Mr. Hutton's paper on "The Use and Abuse of Cake as a Feeding Stuff," read at last meeting but one, was opened by the chairman. Mr. Thompson dealt with the whole subject of cakes and their composition in a most exhaustive manner, illustrating his address by means of samples of good and inferior cakes, and the materials from which they are manufactured. The question of the most economical feeding stuffs was, said Mr. Thompson, one of the very greatest importance to agriculturists of the present day, who had to fight against a perfect army of foreign competitors, and also to veterinary surgeons, who were charged with the health of their flocks and herds. A good deal of difference of opinion had often been expressed as to the value of oil, but the latest experiments, and the controversy which had lately taken place in the *N.B. Agriculturist*, had gone to show that animals could not be rapidly fattened without a good percentage of oil, which was ready-made fat. In the olden days, when nothing was fed to cattle but turnips and straw, cattle were undoubtedly made fat; but they took a much longer time than was required now that they had the assistance of rich concentrated foods of high-feeding qualities. The value of a good concentrated food, such as some of their better class cakes, was undoubted, and if properly used, could be fed to cattle with very considerable profit. Numerous cases could be quoted where men were known not only to have greatly benefited their farms, but to have filled their pockets off a judicious use of concentrated foods on their holdings. In one case which he knew of in Cumberland, a gentleman who had been several years in Australia came home, and took one of the very poorest farms in the county. They would hardly believe it, but in fifteen years that man had not only turned the place into a perfect land of Goshen, but had made sufficient money to retire and live in comfort in the town of Carlisle. His plan was to buy small Irish or other stirks at not over £5 per head. At first an allowance of 2 lbs. per head per day of cake was allowed, but as they grew, the allowance was gradually raised to 10 lbs. per day until they were fit for the market. That man's account for cake alone often amounted to £1,150 in the year, or almost £100 per month. Of all the cakes, he took linseed cake to be the best feeder for winter consumption. This was made from a great variety of seeds. Russian seed made the best cake, and Bombay next. A good screened cake (that was when the impurities were screened out of the seed before it was crushed) should show an analysis of at least 13 per cent. oil, 11 per cent. moisture, 29 per cent. of albuminous compounds, 28 per cent. mucilage and carbonaceous principles, and not more than 1½ per cent. of sand. In buying linseed cakes, he would advise them always to take one with as high per cent. of oil as possible. Many cakes, however, might be sold as pure, and yet not show anything like such an analysis as that stated, for the reason that the seeds had been crushed up without any of the impurities having been extracted. Several samples recently analysed by the chemist of the Royal Agricultural Society had shown as much as 13 per cent. of sand. In this connection he would advise them always to buy an old-fashioned oblong cake in preference to a broad, thin one, which was almost certain to be deficient in oil. It was the seed crusher's interest to get as much oil out of it as possible, as the oil was worth four

times the value of the cake. Of course they would be a trifle dearer, but the extra quality was more than worth the difference in price. A good linseed cake formed a capital food for young stock, and invariably kept them in the best of health. Mr. Thompson had also a good word to say of decorticated cotton cakes, but if damaged by wet in transit it was apt to become heated, and perhaps mouldy, when it was dangerous to stock, as the small mould fungi were apt to produce blood disease such as Anthrax or Splenic Apoplexy. Decorticated cotton cake should, he considered, always be used in combination with some farinaceous matter—Indian meal, crushed oats or wheat. As a milk, butter, and flesh producer it stood unrivalled, owing to the heavy percentage of flesh-forming materials it contained. When consumed by stock on old worn-out grazing pastures it was the best way to renovate the land; it was also best adapted for the summer feeding of cattle. It should never be given to stock under one year old, except with the greatest of care and judgment. Regarding undecorticated cotton cake, it had a good effect in early spring, when the grasses were young, in preventing looseness in the bowels, but it should always be used fresh. Large stocks ought never to be stored, for if kept over the months of July and August this cake became mouldy and dangerous to stock. Palm nut cake and meal, also cocoa-nut cakes and meals, as well as rice meal, were in fairly good demand as milk and butter producers. Bran had not, in his opinion, very high feeding properties, but it was very useful for stock in various ways. He believed in a mixed food, but did not advocate the use of prepared compound mixtures. The articles used in their composition might often be of an inferior and occasionally mouldy character. There was, he held, nothing superior to the simple cakes. These could be crushed and mixed with home-grown ground corn when required, and, if necessary, flavoured with powdered locust bean meal or fenugreek. If they wanted to have their foods mixed, they ought to buy the materials, and mix them to their own satisfaction. Regarding the point raised by Mr. Hutton, whether the bacillus of Anthrax was preserved in cotton seed cakes, even after they had been subjected to high pressure, he (Mr. Thompson) would not offer any opinion, but it was within his knowledge that in wool shoddy, which had been subjected to great friction and heat, no fewer than sixty distinct species of plants were found. If such a variety of vegetable life could be found in wool shoddy after the friction to which it had been subjected, he did not see why the bacillus of Anthrax, if it was in the woolly film attached to the cotton seed at all, might not survive the operation of crushing.

A discussion followed. As bearing on the point whether germs of disease could be retained and developed in cotton seed and substances of a like description, Mr. Rutherford referred to the case of a horse which he had had under his care recently. Blood taken from this horse before death was discovered to be full of germs of disease, such as they might expect in the case of Anthrax; but that it was not the latter disease was proved by the fact that a series of cultivations and inoculations had failed to develop the disease or to produce it in other animals. In these circumstances suspicion pointed to the litter, which had not been changed for several days, and had therefore got heated, and into a condition favourable to the development of any germs that might have been stored in it. That was the only explanation of the disorder which he could think of; for in respect of ventilation, and such like, the stable was one of the best he had in his practice. The president mentioned one or two cases of an almost similar description which had come under his notice, but in these cases the disease was produced by the animals receiving corn which had become heated and mouldy. He believed any substance, whatever it was, which had a quantity of mould upon it, was most injurious to stock, and he had always warned his clients against using such. With reference to the statement made in his address by Mr. Thompson that

sixty different species of plants had been found in wool shoddy after it was submitted to high friction and heat, Mr. Phillip asked if it was not possible that some of these plants might have been blown on to the shoddy after it was discharged from the mills in which it was used. The president said he had the authority of a well-known botanist, who had not only identified the plants, but had named them, for the statement. At the same time, he could tell the gentleman that it was practically impossible for the seeds to have been blown there, for the simple reason that they did not grow, nor were they known in any of the surrounding districts. He might mention that one of the plants found in the shoddy was the tomato plant. Mr. Phillip remarked that if it could be proved that such plants were not blown on to the shoddy waste, the fact that they retained their validity, after passing through the heat and the friction, was a substantial testimony in favour of the statement which had been made that the bacillus of Anthrax could be developed in cakes made from foreign seed.

Mr. DURKIE, Dundee, said he had had considerable experience of feeding stuffs; and while he did not wish to say one word about Mr. Thompson's statements in regard to cakes, his own opinion was that a judicious mixture of grains was about the best feeding substance they could get. He would give them an instance of one of his experiences with grain. Two or three years ago he bought, about the middle of October, a lot of thirteen stirks, at £5 15s. a head. They were in very lean condition, and he allowed them to run at grass till Martinmas, when they were placed in an open court. As he had only two acres of turnips, he had to consider what would be the best food to use with these to bring his cattle through the winter. As grain was cheap that year, he determined to have a mixture of that sort, and he mixed, as the president had named, about the proportion of one of albuminous or nitrogenous matter to four or five of fat-forming matter. He began with a small grain ration at first, but afterwards increased it, till, when the grass came in the spring, he found that the cattle were quite fat, and would likely have lost more than they would have gained if they had been put to grass. Accordingly, on the advice of his friends, he put them into the market, with the result that he found a customer (a butcher) at £15 per head. That was in the month of April, so that these cattle paid him over £9 per head for their keep from October to April—a very good return, considering the cost of the material on which they were fed. On another occasion he had almost equally good results from maize meal, the cattle not only feeding rapidly on it, but laying on a superior quality of flesh. He maintained that grain feeding was not only more profitable for the farmer, but was better for the butcher, and if more generally adopted, would render them independent of many of those questionable makes of foreign cakes which were being sent into our markets.

Professor W. O. WILLIAMS asked if any one had had any experience of dried brewers' grains as a food for horses.

Mr. RUTHERFORD said they were used in one stable with which he was connected, and must say the health of the horses was quite as good as it had been before the grains were used, and their condition excellent.

Mr. HUTTON, Kelso, said it was an unquestionable fact that butchers preferred cattle fed on grain to those that were fed on cake. Not only did they weigh better, but he was told that the flesh was sweeter, and not so liable to run to yellow fat. He had been told by a large butcher, only the other day, that he would give 1s. per stone more for grain-fed than for cake-fed cattle. Cake, however, if of good quality, was a very good feeder, and was very useful when the price of grain put it beyond the reach of the feeder, which, however, was, unfortunately, not very often the case nowadays. When the cake was used, he advised a mixture instead of using only one brand, unless the analysis showed it to be a perfectly balanced food.

Mr. THOMPSON, in summing up the discussion, said there could be no doubt grain was a most valuable feeder; but the question was, what paid best? It was all very well to say that grain-fed cattle paid best; what they had to consider was not so much what would give the best return to the butcher, but what would give the best return to the feeder. He did not mean to say cake was more profitable than grain as a feeder; circumstances would rule that matter to a very great extent; but there could be no doubt that cake was a valuable auxiliary food, and, when judiciously used, often proved very profitable to the farmer.

*Veterinary Cases.*

Afterwards a number of important clinical cases were submitted. and an interesting discussion on each followed. One case, brought forward by Mr. Rutherford, was that of a young half-bred mare which had both her thighs severely lacerated by a horse which had broken into her box during the night. The mare was a valuable one, and she was terribly injured, the wounds being several inches deep at some parts. After three weeks' treatment, the only complication which he was afraid of—lockjaw—set in; but by instantly reverting to an old-fashioned system of treatment, which changed the character of the wound, this terribly fatal disease was checked, and the mare ultimately recovered. From this Mr. Rutherford argued that it was often possible, by changing the character of the wound, to bring relief to a tetanic animal, which, in other circumstances, would likely succumb to the disease. Mr. Cunningham, who was familiar with the case, said that if ever an animal owed its life to veterinary science, it was that mare. The wounds were the worst he had ever seen. At some points one could have put the closed fist into the cavity made. Mr. Thompson also submitted several cases of twisted and knotted bowels in the horse, six cases of which had recently come under his notice. These cases, which were described by Mr. Thompson, also led to a very useful discussion.

Votes of thanks to the president and Mr. Hutton for their addresses (the latter at last meeting) terminated the proceedings.

R. RUTHERFORD, F.R.C.V.S., *Hon. Sec.*

## LINCOLNSHIRE VETERINARY MEDICAL ASSOCIATION.

THE quarterly meeting of this Association was held at the Lumley Hotel, Skegness, on June 26th. Present:—F. L. Gooch, Esq., F.R.C.V.S. (the President), in the chair; Messrs. W. H. Brooks, Fulbeck; W. B. Dickinson, Boston; B. Freer, Uppingham; J. W. Gresswell, Peterboro'; C. Hartley, Lincoln; F. A. Holmes, Hemswell; J. Mackinder, Peterboro'; T. J. Marriott, Bottesford; Capt. B. H. Russell (Treasurer), Grantham; T. A. Rudkin, Grantham; T. Smith, Market Rasen; J. Smith (Hon. Sec.), Huntingdon; and Messrs. Mellish (America) and Kemp as visitors.

Letters of apology were read from Professors Pritchard and Walley, and Messrs. Greaves, Hardy, and Wragg.

The PRESIDENT then delivered his inaugural address as follows:—

Gentlemen,—My first duty as President of your society for the ensuing year, is to thank you for the very kind expression of gratitude for my past services as Secretary, and also for the unanimous vote at your last meeting in electing me as your officer at the head of affairs. You who were present at that meeting, will remember that I accepted the presidential chair with much reluctance. I had my reasons for so doing: Firstly, I considered that although I had acted as secretary for nearly four years, I had only done my duty to the Society as one of its members; there were other members who had a prior claim to the chair—men who were better able to fill it than I was—men who had been vice-presidents of the Society—men who had given us

a taste of their literary ability in bringing before the Society some useful papers for discussion, and who were much older and more experienced than myself. Secondly, I felt I had not the time at my disposal to fill the chair with satisfaction to myself and the members of the Society. Thirdly, I thought that a member ought first to be elected as a vice-president, and I should certainly like to see it added to our rules that no member can be elected to the presidential chair until he has filled the office of vice-president for at least twelve months.

In a president's inaugural address, I do not think it would be out of place if we took a retrospect of the Society's working since its commencement. The Lincolnshire Veterinary Medical Association was formed at the Albion Hotel, Lincoln, on January 18th, 1883, so that we are seven years old; at that meeting thirteen members of the profession were present, now we number about forty. Our present worthy treasurer was elected unanimously to the presidential chair. Since that time I think we have been progressing slowly, but surely, which may be accounted for in more ways than one. Although a few of our members reside out of the county, only one county enters into the formation of the Society; but still there are quite sufficient members of the profession residing in Lincolnshire alone to make one of the largest societies in England, if so much apathy were not shown in joining the Society, and also in attending its meetings. Another reason, I think, is the bad railway accommodation to the towns in the county, more especially the northern part. Financially we stand very well, as I believe we have a balance in hand of about £15—not a very large balance, but still it is on the right side. Since I joined the Society I have asked many members of the profession to join us, and in reply, this question has been asked—What is the use of joining, and what good will one derive from it? and although I thought it a very selfish question, I was able to answer it by affirming that I, for one, had received immense benefit from being a member of the Association, not only by hearing papers read and taking part in the discussion thereon, and hearing the opinions of its different members ventilated, but at the social table afterwards I have gained many little practical hints (just the very ones I have wanted). I think that is a place where, if a young practitioner (yes, and old ones, too) will but enter into conversation, they will hear not only the opinions on the subject for the day ventilated, but if a practitioner has had any special case, it is almost sure to be told around the convivial board.

Since I was admitted a member our profession has made rapid strides to get on an equal with the sister profession, and not without a fair amount of success. We have not only advanced in surgery, medicine, etc, but also in position. Particularly is this noticed in the Army Veterinary Department. Then again, our literature certainly gives evidence of our progress, and it will repay any member who is not given much to reading to peruse the various veterinary periodicals of the last twelve months, wherein he will find cases of skilful surgery, original essays on different scientific subjects, and also a large amount of research into the causes of many diseases which before were only vague and founded upon supposition. Particularly is this the case in the many diseases that have been traced to forms of bacteria and parasitic causes. It is said with truth that the professors of human medicine have more leisure and better opportunities for research and experiments; but I think we have men in our profession who have raised its position not only in the eyes of the sister profession, but in the eyes of the public generally, by their research and contributions to veterinary literature.

In looking through the *Veterinary Record* for last week—which, by the way, I think we ought as country practitioners to be very thankful for, for through its pages we are made acquainted with everything that is going on in the profession up to date, whereas before it was started we were a whole

month, and very often longer, before we heard about anything that was going on in the Council Chamber and elsewhere, so that we were not enabled to express an opinion on any subject of discussion, until very often it was too late, and, I think, we ought to assist the editor by sending him such accounts of cases that have been beneficial to ourselves, and thus enable him to publish them for the advantage of the members of the profession. The article I saw in the *Record* was the Infectious Disease (Prevention Bill), which was introduced into the House of Commons by Mr. Lees Knowles, in which I considered there was one Clause, at any rate, concerning which the veterinary practitioner was entirely overlooked, viz., that a Medical Officer of Health should inspect a dairy, and if he suspected infection he could immediately stop the sale of milk from such dairy. These points were objected to, but passed to a Standing Committee. The Central Chamber of Agriculture took the matter up, and after securing a postponement of the Bill, sent it to Mr. Knowles with this amendment, "That the Medical Officer should he accompanied by a Veterinary Surgeon," and one member suggested that the words "properly qualified" should be placed before the words veterinary surgeon. My opinion, gentlemen, of the members of the sister profession in general is that they are far more at home in a lady's drawing-room than in a cow-shed or a slaughter-house, and I think if the Bill had been passed it would have been a direct insult to the veterinary profession.

I should very much like to see the Lincolnshire Veterinary Medical Association larger in numbers, and would suggest that if every member would bring all his influence to bear on some one member of the profession not at present a member of the association and persuade him to join, we should immediately double our numbers. At the same time, we have certain members of the profession in our midst (shame be to those members) who are not fit to join us; I for one would be the last man to propose such members. Still, there are, I believe, something like eighty members of the profession in Lincolnshire alone, and I think we could persuade some of them to join our ranks.

Gentlemen, in conclusion I again thank you, and trust, if I am spared to see the close of my year of office, I shall employ my utmost endeavour to make the Lincolnshire Veterinary Medical Association quite on an equal, if not superior to the leading veterinary medical associations, both in numbers and position.

After the President had been thanked for his address, the minutes of the last meeting were confirmed, and the letters of apology for non-attendance were read by the Secretary.

It was decided to hold the next meeting at Lincoln.

Mr. DICKINSON then read his paper on

## ELECTRO-THERAPEUTICS.

Mr. President and Gentlemen,—Electricity has probably the brightest future of any known science: its value as a remedial agent in the lower animals is not so much recognised as I hope it will be in the future.

It is a force which is developed in many ways, the result being essentially the same under all circumstances. Frictional electricity is obtained by rubbing two surfaces together, and is hardly ever resorted to in medical or veterinary practice. Electricity is generally obtained by the union of two dissimilar metals, and is then called Galvanism.

It is not my intention to speak of the merits or demerits of any particular arrangement which generates the current of this power, but to confine myself strictly and briefly to the success of its use as supplied to animals.

I have practised Galvanism since 1879, using Leclanché, Spamer's and the

Magnetico-Galvanic Batteries. I find the last-mentioned the most useful and serviceable to the veterinarian for two reasons—firstly, it is less expensive and very portable; and secondly, it rarely gets out of order, and can be left with the patients and used by the attendant. By the use of these so-called Magnetico-Galvanic machines the interruptions are very rapid—the to and fro currents separate from one another. The succession of these currents in one direction have all the chemical effects of a steady current—in fact, they produce the same, if not better results than chemical currents. In employing galvanism it requires the utmost patience and strict observation by those who wish to have success with its employment. They must persevere daily, possibly for a week or ten days in some cases, before any benefit is apparent in the condition of the patient, whereas in other patients restored muscular function is noticed after three or four shocks of short duration.

It must be plainly understood that this power, or Therapeusis, is not set forth by me as an agent to cure every form of muscular or nervous inability; therefore a correct diagnosis, as to the true cause of the motor inactivity, must be ascertained before faradization is employed.

When the spinal centres lose their influence upon a muscle, or group of muscles, there is a loss of electro-contractility; whereas if the paralysis exists in the muscle, or group of muscles, from a lesion, so as not to interfere between them and the nerve cells of the cord, their integrity is maintained for many weeks. When a muscle is degenerating for want of spinal influence, the power of response to slow currents is lost.

This condition I have more especially seen in mastiffs, particularly in the hinder extremities, where atrophy of the gluteal muscles is first noticed, and paralysis supervenes; thus showing that the spinal centres have lost their influence in this particular instance.

I have noticed in the hinder extremities of cattle affected with apoplexy, total destruction of electro-muscular contractility, which probably proves the lesion to be in the nerve trunk—for instance, clots in the lumbar region or cauda-equina.

One celebrated author says—"It may be laid down as a practical rule, that when, in an adult, a muscle loses, to a sensible degree in a few days, its electro-contractility, there is no doubt of the situation of the lesion, which is in the nerve trunk."

In Hemiplegia I have seen some remarkable changes from the use of galvanism, but it must be remembered that there are two factors which account for the paralysis. The organs of motor power lose their structural integrity from want of use, succeeding the injury to the nerve centre, the restoration of which does not necessarily involve the restoration of this motor influence. The cerebrum may totally or partially recover, while, from its long-standing impairment, the muscles become degenerated when there is no response to the impulse given by the application of galvanism. This will account for unsuccessful faradization in some cases.

In cases of Hemiplegia, existing for one to two months, I have seen the most brilliant results from this treatment after all others have failed. Once, in acute Rheumatism in the horse, I employed electricity with good result. The animal, a five-year old gelding, was affected in the hip joints, with Metastasis to the patella and hock.

In Facial Paralysis, or "Droplip" in the horse, when there has been inability to gather food or to drink, except with difficulty, and after ordinary treatment, such as fomentation, blisters, etc., galvanism has effected all that could be desired, after being employed for fourteen or fifteen days.

In Ante- and Post-partum Paralysis in cows and mares—especially in cows, which I have seen exist seven days before, and as many as thirteen after calving—there was complete and permanent recovery from motor inability

after the first four or five days, from two shocks per diem in the recumbent posture.

In cattle suffering from Gastric Derangement, impaction of the rumen, and Paralysis of the hind quarters, which condition, I think, is due to some interference with the semilunar ganglia and the lumbar portion of the sympathetic system, manifested by loss of muscular power, suspended rumination and loss of milk—in the course of two or three days, after giving mild saline purgatives, etc, I use the battery, when, after two or three shocks, rumination and gentle purgation is soon established, and the wished-for upright position is agreeably welcomed by all concerned.

Galvanism is also very useful in the horse, in loaded colon, when the action of the bowels is suspended; also in torpidity of the bowels. It has a marked effect in all cases where medicine often fails in bringing about what is desired. In all cases of loss of muscular power where the brain is affected, I withhold galvanism; because a direct shock can only do harm and produce pain by acting as a direct irritant.

As an adjunct to the treatment, I have adopted a very convenient method with dogs suffering from Lumbar Paralysis. Instead of troubling with manipulating the battery poles, I place the poles in a dog-bath, containing water sufficient to cover the feet or legs, place the dog in, and then set the battery in motion, taking care that the dog is muzzled, and the top of the bath is covered over.

I have adopted different methods of applying this treatment, viz., by using flattened pieces of brass, with sponge attached, and enveloped in wash leather, using them as poles. This method answered very well as long as the patients were unable to rise, otherwise it was objectionable on account of restlessness while undergoing the shock, hence the difficulty in keeping the poles in their position. This I endeavoured to obviate by the use of a girth over the poles, but failed in most cases. After many trials with the girth, I resolved to try a method which might to some appear inelegant and cruel, but the end justifies the means. The battery wires are attached to two brass needles, from six to eight inches in length, which are pointed at the end. I make an incision in the skin, with a pair of small rowelling scissors, then introduce the needles to the extent of about one inch subcutaneously, and no matter how much the patients fight it is impossible for the needles to get misplaced. The time occupied in producing the shock for the first two or three operations varies from three to five minutes, increasing to twenty minutes—once or twice daily.

In conclusion, gentlemen, after the most careful observation for the past few years on the therapeutic value of this agent, I am quite confident you may use it, to a very great extent, with as much success as I have done in most of the palsies of which animals are the victims.

Capt. RUSSELL congratulated Mr. Dickinson on his paper, and said he was fully persuaded that there was a great field for magnetism as a therapeutic agent, especially in Post-partum Paralysis following Parturient Apoplexy, also in the treatment of wounds.

Mr. FREER, after thanking the essayist, said he had not had much experience in the use of a battery, but had seen good results from the application of magnetism, especially in Post-partum Paralysis. He was also of opinion that it should be tried in Chorea, or incipient shivering in young horses.

Mr. GOOCH said he had proved it a useful agent in the treatment of Paralysis following Distemper in dogs.

The meeting closed with a vote of thanks to Mr. Dickinson for his paper. The members afterwards dined together.

JAS. SMITH, *Hon. Sec.*

## Jurisprudence.

### DISHORNING CATTLE.

A CASE to test the legality of dishorning cattle came on for trial at Kells, Ireland, on July 3rd, before two Justices of the Peace. The case was brought forward by the Crown, under the Act for the Prevention of Cruelty to Animals, and the trial lasted for three days. It presented nothing noteworthy, except the usual conflict of veterinary evidence. For the prosecution Professors Walley, Pritchard, Axe, McQueen, and Hill, and F. Collins, F.R.C.V.S., gave their opinion that the practice was cruel; while for the defence Professors W. Williams and McFadyean, and Veterinary Surgeons Greaves, Freeman, Reilly, McKenny, Simcox, and Lawlor asserted that dishorning was not cruel.

The magistrates, after remarking on the serious conflict of opinion on the question, dismissed the case, but agreed to state a case for the decision of the Queen's Bench Division in Dublin.

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## Army Veterinary Department.

*Gazette*, June 27th.

YEOMANRY CAVALRY, NOTTINGHAMSHIRE (SOUTH).—John Brett, gent., to be Veterinary Surgeon.

*Gazette*, July 1st.

Principal Veterinary Surgeon G. Fleming, C.B., F.R.C.V.S., having completed seven years' service in the appointment of Principal Veterinary Surgeon, has been placed on retired pay.

Veterinary Surgeon (First Class) F. Duck to be Inspecting Veterinary Surgeon, vice J. D. Lambert, F.R.C.V.S., promoted.

Veterinary Surgeon (on probation) J. Moore to be Veterinary Surgeon.

J. Loughlin, gent., to be Veterinary Surgeon on probation (ranking as Lieutenant), in succession to Veterinary Surgeon (First Class) F. Duck.

*Gazette*, July 18th.

FIRST LINCOLNSHIRE (WESTERN DIVISION, ROYAL ARTILLERY VOLUNTEERS).—John Henry Loft, gent., to be Veterinary Surgeon.

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## Obituary.

THE Veterinary Department has lost a very promising young officer in the person of Mr. Dundon, M.R.C.V.S., who was unfortunately drowned at Lucknow on June 27th. He graduated in 1881, and entered the Army on December 10th, 1884.

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## Notes and News.

RABIES IN POLAND.—The St. Petersburg correspondent of the *Daily News* telegraphs that an outbreak of Rabies has occurred in Poland, in the neighbourhood of Lioublin, where more than one hundred dogs and an equal number of swine were attacked. Several hundred cows and sheep were bitten by the furious animals.

TUBERCULOUS CATTLE.—The following official statistics relating to the public slaughterhouse of Augsburg may be interesting: During 1889, of 23,592 calves slaughtered, only one (an animal three weeks old) was found to be tuberculous. Of 13,679 head of older cattle, 612, or 4.4 per cent., were tuberculous. Of 8,537 oxen, 167, or 1.94 per cent., were tuberculous; while of 5,008 cows, 445, or 8.88 per cent., were affected with that disease. In 4 cases, or almost 1 per cent. of the cows, the udder was the seat of Tuberculosis. In 67 of the 612 cases in which disease was discovered, the flesh was declared unfit for food on account of generalised Tuberculosis and destroyed.

THE BACILLUS OF GLANDERS.—At a recent meeting of the Academy of Medicine, M. Cornil gave an account of M. Babes's researches on the bacillus of Glanders, which show that this micro-organism, when obtained from pure cultivations, can penetrate the healthy tissue of animals, and thus cause Glanders. Rubbing in pomatum containing the bacillus rarely succeeds, and only when the virus is very active and obtained from a perfectly fresh cultivation. Prof. Nocard, of the Alfort Veterinary School, repeated M. Babes's experiments, and two guinea-pigs out of five were infected by rubbing them with a pomatum containing the bacillus.

HORSE-FLESH AS FOOD.—The sale of horse-flesh as human food was authorised in France in 1856; the consumption in Paris alone amounted to 4,500,653 kilogrammes in 1886. At Berlin 7,000 horses are slaughtered for food every year. At Vienna 6,271 were disposed of in the same way in 1887. In Italy horse-flesh can be lawfully sold as human food; the town where it is most largely eaten is Milan.

THE LEECH.—When a leech bites it must never be dragged off, or the teeth may remain in the flesh, and cause profuse bleeding. If it does not drop off of its own accord, sprinkle a little salt over its head, when it will quickly relinquish its hold.

AGE OF ANIMALS.—A bear rarely exceeds 20 years; a dog lives 20 years; a fox 14 or 15; lions are long-lived. Pompey, a famous lion, lived to the age of 70; the average of cats is 14 years; squirrels and hares 7 or 8 years; rabbits 7 years. Elephants have been known to live to the great age of 400 years. When Alexander the Great had conquered Porus, King of India, he took a great elephant which had fought valiantly for the king; he named him Ajax, dedicated him to the sun, and let him go with this inscription, "Alexander, the son of Jupiter, has dedicated Ajax to the sun." This elephant was found 354 years after. Sanderson, our greatest modern authority on the elephant, however, considers that the average age is from 150 to 200 years. The natives of India fix the maximum at 120 years. The horse has been known to live to the age of 62, but averages from 20 to 25 years. Camels sometimes live to the age of 100 years; cows live 15 years; sheep seldom exceed the age of 10; pigs have been known to live to the age of 30 years, and the rhinoceros to 20 years. Stags are long-lived animals. Cuvier considers it probable that whales sometimes live to the age of 1,000 years. Dolphins and porpoises attain the age of 30 years. An eagle died at Vienna at the age of 104 years. Ravens have reached the age of 100 years; swans have been known to live 360 years. Pelicans are long-lived. A tortoise has been known to live to the age of 107 years.

A DEADLY SNAKE.—The Daboia is a very beautiful, but a most deadly snake. Its groundwork of colour is light chocolate brown, and down the body-length run three parallel successions of black diamonds, slightly elliptical, edged with white, and retaining the brownish-yellow groundwork in their centres. Upon the head the snout is marked by two lateral coverin g

yellow lines. The labial and rectal shields are yellow, with brown marquis, and behind the eye a triangular brown, black-edged spot. Ventral surface yellowish, or marbled with more or less numerous semi-circular brown spots on the hinder marquis of the ventral shields. When attacked, it strikes furiously, and hisses and blows vigorously. The daboia measures, when full grown, about thirty-five inches long. The fangs are nearly half an inch long. The poison is known as "venom globulin," of which it may contain 25 per cent. It is a fatal blood poison, producing complete fluidity of the blood, early paralysis, and intense respiration, which continues longer than in the case of an organism venomised by the cobra, however, whose lethal power is nervally terrible. Daboia venom causes convulsions, but does not select nerve centres immediately. Turkeys and fowls have died in less than sixty seconds when bitten by this reptile, and men in less than an hour.

Germs, Harmful and Harmless.—Science has succeeded in tracing the exact relationship between many germs and the diseases they respectively produce. Inoculations and cultivation of specific disease germs have experimentally taught us the truths as to the often fatal work the semiscropic units accomplish within the animal domain; but beyond these details, all important as they are, lies the further question, "How came these germs into existence?" The air around us contains much floating matter. Of this matter, a certain proportion is of mineral and inorganic kind, but much of it consists of the "spores" or young forms of fungi and mould, of starch granules and pollen grains, of yeast plants, and other living things. To conclude that every living speck borne by air, earth, or water is necessarily a disease-producing germ, is as erroneous, therefore, as would be the idea that no disease germs existed at all. It is clear, then, that when we speak of living germs, we must distinguish between those which are disease-producing and those which are not. A piece of "high" cheese allowed to remain in a cheese-dish, secluded largely from the air, will develop a crop of blue mould. This familiar fungus has arisen from the spores or young particles, which, given off by a preceding and parent mould, floated in the air until they found a suitable soil in the damp cheese. Therein flourishing, they gave origin to the mould of which they were the early representatives. This is an excellent example of germ growth, it is true, but it is manifestly not an illustration, in any sense, of the production and development of disease germs. But if from a patient affected with scarlet fever, from whom we know countless germs are being exhaled, another person takes that disease, we see in such a case merely a repetition of the circumstances attending the growth of the mould. The spores or germs of the fever floating in the air found a soil in the human frame, and produced therein their own characteristic effects marked as truly by the characters of the fever, as is the blue mould by its blue tint and the botanical features of its growth.

Diseases among Wild Animals.—In the last report of the Central Park Menagerie, New York, it is noted that the principal cause of death among the animals in 1889 was congestion of the lungs.

Dishorning Cattle.—With reference to the test case tried in Scotland lately, the *Standard* of July 21st remarks:—"Unfortunately, the decision of the Scotch Court of Appeal in the Haddington dishorning case is still in abeyance, the Judges having remitted the case to the Sheriff, requesting him to give his finding upon the point as to whether partial dishorning would be a sufficient preventive to the infliction of injury by goring among cattle, which has been pleaded as the justification of an extremely painful operation. The Sheriff, it appears, deliberately refrained from declaring his opinion upon this point, and if he still declines to satisfy the Judges of the Court of Session with respect to it, all the expense incurred in what was intended as a test

case will have been a mere waste of money. Seeing that Judges appear hopelessly at variance as to the law in relation to dishorning, the sooner Parliament steps in to settle the question by an authoritative Act the better."

CHLOROFORMING A BULL.—"We (*Buenos Ayres Standard*) hear of an extraordinary veterinary operation performed by Mr. Robert S. Mitchell, M.R.C.V.S.Eng., perhaps one of the most if not the most successful veterinary operation of modern surgery, on an imported bull, the property of the trustees of the late Signor Corti, which was purchased last year for the sum of 5,000 dols. gold. For some time past a large growth had been forming on the throat of this animal, and yesterday Mr. Mitchell decided to remove the obstruction which endangered the bull's life, and most successfully removed a tumour of twenty-four ounces weight, sections of which he has forwarded to a specialist for microscopical examination. This is perhaps the only case on record of a bull being chloroformed, it taking as much as ten ounces chloroform and six ounces of ether before he was under the influence."

STUTTGART VETERINARY UNIVERSITY.—By a decree of March 5th, the Stuttgart Veterinary School has been raised to the rank of a Faculty or University (*Hochschule*), like the schools of Berlin, Hanover, and Dresden.

THE ABSENCE OF RABIES IN BRITISH COLUMBIA.—A correspondent of the *British Medical Journal* writes: "Hydrophobia is another scourge of mankind which has not yet passed the Rocky Mountains. If wild, neglected, masterless dogs could originate hydrophobia, this province should suffer acutely. The Indians love to surround their camps with wretched, often half-starved, mongrel dogs; and in Vancouver the plague of ownerless dogs was so great that active measures had to be put in force for their destruction."

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# Correspondence.

## WHAT IS IN A NAME?

SIR,—So much tact is employed by some to win a name in the veterinary profession, that one individual in particular, who has taken the opportunity of telling the members of the veterinary profession, as well as its Council, what he thinks about them, has promised a "true lover's knot" in gold. He has strong views, especially with regard to what is fitting and seemly for some members, and his devotion to their special interest knows no bounds. This, of course, is nothing new; as making a name is the principal mission of all young men in every age and in every country. Shakespeare has said, "What is in a name?" But name is synonymous with the object aimed at. History tells us that the Apostle St. Paul employed tact in Divine work. "Ye men of Athens, ye are a religious people!" But surely this was a very different species of tact from veterinary psalm-singing of the most degrading kind. Notwithstanding these excitants of the sensorium, excitants in general never enjoyed any very great intellectual favour with the ancients. Even the poets celebrated them more as pastries than as food.

It has been said by a veterinary editor, whose name I will not mention here, that "scientific attainments are by no means the only requisite for a Councilman." Nobody says they are. But it is a high attainment—the attainment that members of the veterinary profession need most of all. Wisdom and tact, and all the other good qualities, may come with age, but a man's "long years" are no indication of his scientific attainments; while the fact of anyone possessing a large share of scientific knowledge proves no barrier to his showing tact as well. That a twopenny editor should have

a reputation suitable to his dignity, nobody would dispute; but why such a cheap one, is what no sane individual can understand. Poor fellow, if he would keep on good terms with his neighbours, he must frequently resort to an abundance of soap and water; but what is sauce for that goose is not sauce for a profession.

It is not so easy for the most extraordinary of individuals to measure a man's intellectual capacities, looked at from different standards; and we fancy our friend knows enough of "soft-soap" to be able to write with tears which cannot fail to win the weak-hearted; and, indeed, if some of England's oldest veterinary editors had only lived, it is likely they would now have taken a more cheerful view of life; for it is well known that the unfortunate cause which robbed them of all their success was honesty, which they believed to be their best policy. But the men of tact (shall I so designate them?) say that this does not pay in the present generation. Whether a man gambled in a newspaper or on the Stock Exchange, he was a thief, and the consent of his victims only proved that they were as stupid and immoral as himself.

Our system is assuredly bad, but the root of the matter lies too deep to be cut out by complaints or growls among the profession. I may be allowed to observe that there would be much less quackery, and undoubtedly less misconception, while the status of the profession would be considerably improved, if the present standard of scientific and general education were raised on a level with the other professions. There are certain things which seem absolutely impossible, and even beyond the power of a miracle, and one of the most prominent of these is the solution of the enigma how to make the veterinary profession in England follow the example of the sister professions.

There are some men who ignore science because of their own impotence. They say, "I am good enough." These are men who always swim with the stream, and never trouble about anything. Such men do much harm by the degrading influence they exercise over those around them in life. They won't see, because they have never been in rebellion with themselves—with what they know.

> "In small proportions we just beauties see;
> And in short measures life may perfect be."

From a correspondence which has recently been going on, it is evident that a deeply-rooted prejudice exists in the profession against progress in every form. A man's education may be excellent, and his experience fairly wide, but all to no purpose if he does not recognise the value of tact. In fine, he is expected to cheerfully disarrange the whole of his scientific training, and be all things to all men; he must have a select stock of observations about the weather always on tap, and contrive to endorse diametrically opposite opinions.

With his opportunities thus seriously curtailed, and his chances of any further progress daily growing less, it is too often the case that the young practitioner has to abandon his zeal in despair, and is forced to join the ranks of the unfortunate throng of those "who have learnt to move with the tide."

UNG ROY, UNG FOY, UNG LOY.

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## VETERINARY EDUCATION.

SIR,—Before proceeding with the above subject, I may tell you that I am a final year's student who will be going up, after another course of lectures, for the diploma examination, which, I trust, I will be successful in passing. I may also state that I have received a good classical and mathematical education, been brought up among all the domesticated animals, been used

to them all my life, and have served an apprenticeship and seen practice altogether for a period of eight years with my brother, who is a duly qualified man. I was also over twenty-five years of age when I entered the veterinary college. To commence with my subject, Professor Penberthy, in his letter in the *Record*, of June 28th, on "Veterinary Remuneration," says that when we review the course of education of the veterinary surgeon and his after prospects, we are led to a serious and somewhat doleful consideration of the relative value of "the game and the candle." Let me express my opinion on the matter by stating that it is so, but only to a certain class of men. To the well-educated, industrious, hardworking youth, who has been brought up among animals, been among them all his life, has a taste for the profession, possesses an average amount of intelligence, has a retentive memory, and is (which is of great importance when he goes out into the world to practise) physically fit for the profession—to such an one, I say, it is worth studying for; but at the same time I must add that the intending student must have the determination when entering college to get through, if possible, in the specified time, and endeavour, after getting qualified and settled in practice, if his income be only at the rate of thirty shillings a week, to try and live on twenty-five. The day is past for making fortunes in the profession; it is becoming recruited rapidly by new graduates, and we students must be prepared, after becoming qualified, to fight a hard battle for existence; it is going to be the survival of the fittest in the profession. I see also in the *Record*, of July 5th, that Mr. F. Raymond suggests a few remedies to prevent overcrowding. The remedies he suggests are: 1st, To increase the matriculation fees. To this I object; the fees, in my opinion, being quite high enough. 2nd, Raising the standard of education—a correct and wise method. 3rd, Raising the college fees to £100 or more—an unjust and hard one on the student of limited means. 4th, Increasing the period of study to four or five years. To four years being the period of study I have no objection, so long as more subjects are demanded of us, and so long as we are taught them. Why should the veterinary colleges of Great Britain in this the latter part of the nineteenth century, be behind the veterinary colleges of France and Germany in the matter of education? Why are we students not taught the theoretical and practical part of horse-shoeing? I remember, when at college last session, seeing two or three of the more industrious and energetic class of students going after the lectures into the college forge, stripping themselves, donning the leather apron and setting to work—receiving instructions from the foreman, who happened to be a civil, obliging man, endeavouring to forge a set of shoes, fitting them and driving them on, such was their desire to learn the art of horse-shoeing; was not this well-spent time? Why should this not be made a compulsory part of the student's education, as it is in the French colleges? Why are we not taught practically more about operative surgery? If the four years' course is to be adopted, by all means let it, so that we may be taught these subjects. Why do the Council of the R.C.V.S. not demand an examination on practical anatomy in the dissecting room? Why are the first year's students not examined in practical chemistry, such as testing for the different poisons and acids before the examiners in the chemical laboratory? I have often wondered why this system of examining students has not been adopted. Your readers may say, What do I mean by advocating a four years' course and a harder examination, and still object to the college fees being raised? I answer the question by stating that I object to them being raised for the course as it now exists, as I think fifteen guineas per annum (which it averages at present for the three years' course) sufficient for any student to pay. I advocate a four years' course on the conditions that we are taught horse-shoeing, operative surgery, and see more hospital practice, which would be more useful to us than a

great number of lectures. I agree with your statement on the matter in the editorial article in the June number of the Journal. What do the public care whether we are able or not to detect bacilli in a morbid specimen? They want us (and they are pretty good judges, as a rule, as to whether we understand our business or not) to be thorough practical men. I appreciate greatly the theory of our art, but I think we should be turned out to the public as good practical men; for it must be borne in mind that we are gradually taking the place of the "Existing Practitioner," who is, in a good many instances—although harsh things have been said about him—a good practical man. What is to hinder us being turned out as good men? If we are not, the fault lies somewhere—either at the colleges or with the examiners in the practical section of the final examination. The colleges could assist to a certain extent. Could we not be taught how to perform the different operations on the cadaver? I have often thought, when in the dissecting-room, and seeing horses killed for dissection purposes, that many a good opportunity has been lost for gaining practical knowledge. It may be said that we are prevented in this country by the Anti-Vivisection Act, from performing operations on the living animal for the purpose of gaining manual skill. I am aware of all this. Why not teach us how to perform operations which don't come under the Act, such as introducing the catheter into the bladder? Very few of us are taught to do it ourselves—I daresay, not one in fifty. Surely we could be taught more about securing animals for the various operations, by allowing us to practise on the subjects brought for dissection. Let us be more on the operating bed than we are at present. If such a system of teaching were adopted, I venture to assert that the student would be turned out to the public a much better man than he is under the present system of teaching.

A few words about the matriculation examination, and then I have done. With regard to the revision of the examination, I see little gained by it, except a little higher percentage for passing, and either French or German being added to the obligatory subjects; also an uniform examination over the United Kingdom. In my opinion, the matriculation examination should embrace all the obligatory subjects, including French; also Parts I., II. (three books of Euclid, not one), III. of the optional portion, and Natural Philosophy, and have no optional subjects. I can well remember when at college a year ago, listening to an eminent teacher of physiology finding a great want in not knowing something about natural philosophy when he was talking about blood pressure, etc. I was rather surprised when reading the report of the Special Meeting of the Council, at Mr. Hunting's statement to the effect that Latin, as a necessary subject for a medical man, was played out. He seems to think it is of no use to him. Now I beg to differ from him. It is necessary for us to know Latin, so that we may be able to read and write prescriptions in that language and understand the terms made use of in our scientific works. He is also stated to have said that a knowledge of French and German was of more importance, as it would enable a student to read works on anatomy and physiology written in those languages. What does the English-speaking student want to read works printed in those languages, when he has excellent treatises published in his own tongue? Have we not good works on anatomy in the English language in Strangeways' (Vaughan's latest edition), and your English translation of Chauveau?—a work which I have gained great benefit from by consulting it when studying anatomy—a work which the students and members of the profession owe a deep debt of gratitude to you for translating into the English language. Have we not also excellent works on physiology in the English language? At the same time, I say a good knowledge of French is necessary for the student, so that he may be able to read the veterinary periodicals published in that language.

With regard to the percentage for passing, I think it is too low—a student who isn't able to score 60 per cent. in each subject shouldn't in future be allowed to enter any of our recognised colleges.

Hoping, sir, you will excuse me for writing this rather long letter, it being my first, but, I hope, not last one. CELSUS.

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## IS DISHORNING CATTLE CRUELTY?

SIR,—The case just decided by the magistrates at Kells settles the question, so far as it goes, *that dishorning is not cruelty*. The case was carefully, scientifically, and thoroughly gone into, occupying three days. There were eminent witnesses who gave the highest evidence on the side of the Society for the Prevention of Cruelty. There were also eminent witnesses who gave equally high evidence showing the necessity and the reasonableness of dishorning. It is not contended that the operation can be performed without more or less pain; but the advantages attainable by the operation of dishorning are out of all proportion to the pain inflicted, or suffered by the animal, which it was contended was trifling, it being almost instantaneous, and the suffering which follows being only of short duration. It was proved that the operation was for the benefit of the animal, and for the owner as a grazier. The magistrates said: "We are satisfied on the evidence that the dishorning of cattle increases their market value, rendering them more saleable, is customary, and if suppressed would inflict very large pecuniary loss on the community. Cattle when dishorned appear to thrive better, to become quiet and easily handled, less dangerous to man and to each other, and less liable to suffering on pasture and when travelling." It was further proved that no other method could be adopted that would secure so beneficial a result; that partial dishorning and affixing tips or knobs on the ends of the horns were of little or no use.

My evidence went to show that I had been in practice as a general practitioner for fifty-five years, and the appointed consulting veterinary surgeon to the R.S.P.C.A., in Manchester for twenty-five years; that my experience and opportunities of judging of cases of cruelty had been considerable; that I had performed this operation myself, and had seen it done by others, and when properly done it did not take many seconds. I had noted with close observation the amount of pain inflicted, and felt clear on the point that the amount of pain was of short duration, and that it did not amount to cruelty. The moment the horn is removed, the blood spurts out for a yard. I have seen it spurt out over two yards; but this, if left alone, will stop of itself in two or three minutes; but if you place the thumb or finger on it firmly for half a minute it will stop of itself entirely, and requires nothing more being done. Indeed, it is altogether unnecessary to do anything whatever—no tow, no tar being required. The bleeding will rather do good by lessening the tendency to inflammation. If we examine the sawn surfaces of horn in two or three hours after the operation, we shall find that they have become dry—a film has covered them which excludes the air, so that neither inflammation nor suppuration follows. In two or three days all tenderness or soreness are gone. It is my firm opinion that the prevailing notion in some places that the operation is attended with great pain is greatly exaggerated, and that much of this supposition has its base in sentiment.

For many years I held the opinion that general dishorning was unnecessary. I took a humanity to animals view of it. I thought if the ill-tempered animals in the herd (and there are always ten or twelve tyrants or bullies in every herd of fifty or sixty head of cattle) were dishorned that this would meet the case; that those being dishorned would become quiet and peaceable animals by finding that they had now no weapons of offence, and

that the others of the herd would consequently have no longer any terror of them. I also thought that as these discontinue the habit of running the other cattle from pillar to post, that peace and comfort would reign throughout the herd. But in this I was wrong, for it is immediately seen—it being the nature of the animals for the strong to tyrannise over the weak—that the next ten or twelve biggest and strongest now take the place of those dishorned. You may dishorn these, and others will soon be seen to take their place. This spirit seems to be in their nature. They will all do it, from the biggest and strongest to the weakest. Hence it follows that the whole herd should be dishorned; then you secure peace and comfort and happiness, for otherwise quiet life is impossible. The animals can now lie down together, and quietly chew the cud; they can feed together, and can be driven in droves without molesting one another.

I remember when I was young that up to sixteen years of age I lived on the high-road from Liverpool to Manchester, and have seen hundreds of droves of Irish cattle driven to Manchester market, and have witnessed hundreds of instances of this tyrannising and bullying spirit of the strong over the weak. Once I can remember that my father took me and a brother and sister into the road and showed us a pool of blood, and told us that one of the herd of cattle had run its horn into the side of another one, and the blood flowed out, and it died, and was carted to Manchester market. Since then I have seen dozens of horses and cattle die horrible deaths, caused by being gored by the horns of cattle. THOMAS GREAVES, F.R.C.V.S.

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CORRECTION.

WE are asked to state that in the published list of students who passed in Class A. during the May Examinations in Scotland, J. Healy was inserted by mistake for T. G. Heatly.

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## Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from F. Raymond, A.V.D., Woolwich; J. Mills, A.V.D., Chatham; Dr. Gordon, London; R. W. Burke, A.V.D., Woolwich; S. Villar, Harrow; T. Marriott, A.V.D., Sialkot, India; C. R. Marking, Toppsfield; "Celsus"; R. Rutherford, Edinburgh; E. Stanley, Sydney, Australia; L. Browne, Omagh; "Ung Roy, Ung Foy, Ung Loy"; General Sir F. Fitzwygram, London; Professor Boschetti, Turin; H. Kidd, Newbury; J. Smith, Huntingdon; A. W. Hill, London; T. Greaves, Manchester.

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BOOKS AND PAMPHLETS: *G. Armatage*, The Thermometer in Veterinary Medicine; *F. Boschetti*, La Tuberculosi; *MM. Galtier et Violet*, Les Pneumo-enteritis Infectieuses des Fourrages; Viehseuchenbericht von Elsass-Lothringen; *Lungwitz*, Ueber Formveranderung des Pferdhufes unter der Einwerking der Korperlast; *C. Curtis, M.D.*, The Animal Parasites of Sheep.

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JOURNALS, ETC.: *Journal of the Royal Agricultural Society of England; Journal of Comparative Medicine and Veterinary Archives; Echo Vétérinaire; Moderno Zooiatro; Russian Veterinary Journal; American Veterinary Review; Annales de Médecine Vétérinaire; Thierarzt; Lancet; Live Stock Journal; Hufschmied; British Medical Journal; Revue Vèterinaire; Wochenschrift für Thierheilkunde; Revue Internationale de Med. Dosimetrique Veterinaire; Journal of the National Agricultural Society of Victoria; Recueil de Médecine Vétérinaire; Clinica Veterinaria; Medical Recorder; Edinburgh Medical Journal; Archiv. für Wissenschaftliche und Praktische Thierheilkunde; Mark Lane Express; Journal of the Society of Arts; Proces Verbal de l'Academie Royale de Med. de Belgique; United Service Magazine.*

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NEWSPAPERS: *Scotsman; Irish Times; Licensed Victuallers' Mirror; Manchester Guardian.*